The World Bank

1999

World Development Indicators

32

The world by income

Low income
Afghanistan
Albania
Angola
Armenia
Azerbaijan
Bangladesh
Benin
Bhutan
Bosnia and Herzegovina
Burkina Faso
Burundi
Cambodia
Cameroon
Central African Republic
Chad
Comoros
Congo, Dem. Rep.
Congo, Rep.
Côte d'Ivoire
Eritrea
Ethiopia
Gambia, The
Ghana
Guinea
Guinea-Bissau
Haiti
Honduras
India
Kenya
Kyrgyz Republic
Lao PDR
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania
Moldova
Mongolia
Mozambique
Myanmar
Nepal
Nicaragua
Niger
Nigeria
Pakistan
Rwanda
São Tomé and Principe
Senegal
Sierra Leone
Somalia
Sudan
Tajikistan
Tanzania
Togo
Turkmenistan
Uganda
Vietnam
Yemen, Rep.
Zambia
Zimbabwe

Lower middle income
Algeria
Belarus
Belize
Bolivia
Bulgaria
Cape Verde
China
Colombia
Costa Rica
Cuba
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt, Arab Rep.
El Salvador
Equatorial Guinea
Fiji
Georgia
Guatemala
Guyana
Indonesia
Iran, Islamic Rep.
Iraq
Jamaica
Jordan
Kazakhstan
Kiribati
Korea, Dem. Rep.
Latvia
Lithuania
Macedonia, FYR
Maldives
Marshall Islands
Micronesia, Fed. Sts.
Morocco
Namibia
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Romania
Russian Federation
Samoa
Solomon Islands
Sri Lanka
St. Vincent and the Grenadines
Suriname
Swaziland
Syrian Arab Republic
Thailand
Tonga
Tunisia
Ukraine
Uzbekistan
Vanuatu
West Bank and Gaza
Yugoslavia, FR (Serbia/Montenegro)

Upper middle income
American Samoa
Antigua and Barbuda
Argentina
Bahrain
Barbados
Botswana
Brazil
Chile
Croatia
Czech Republic
Estonia
Gabon
Grenada
Guadeloupe
Hungary
Isle of Man
Lebanon
Libya
Malaysia
Malta
Mauritius
Mayotte
Mexico
Oman
Palau
Poland
Puerto Rico
Saudi Arabia
Seychelles
Slovak Republic
South Africa
St. Kitts and Nevis
St. Lucia
Trinidad and Tobago
Turkey
Uruguay
Venezuela

High income
Andorra
Aruba
Australia
Austria
Bahamas, The
Belgium
Bermuda
Brunei
Canada
Cayman Islands
Channel Islands
Cyprus
Denmark
Faeroe Islands
Finland
France
French Guiana
French Polynesia
Germany
Greece
Greenland
Guam
Hong Kong, China
Iceland
Ireland
Israel
Italy
Japan
Korea, Rep.
Kuwait
Liechtenstein
Luxembourg
Macao
Martinique
Monaco
Netherlands
Netherlands Antilles
New Caledonia
New Zealand
Northern Mariana Islands
Norway
Portugal
Qatar
Réunion
Singapore
Slovenia
Spain
Sweden
Switzerland
United Arab Emirates
United Kingdom
United States
Virgin Islands (U.S.)

INCOME MAP

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1999 World Development Indicators

The World Bank

Foreword

The past 18 months have been marked by turmoil that has put the entire global financial system at risk, threatening to undermine the social and economic progress achieved over many years. Millions of people who had glimpsed the possibility of a world no longer controlled by fear of hunger or disease faced the loss of jobs, assets, and civil order. A year ago we confidently expected that the international development goals of halving poverty, cutting infant and child mortality by two-thirds, and enrolling all children in primary education could be met in the next 20 years. Now those goals are at risk, and we must draw on the lessons of recent experience to help us reshape our strategies for the future.

One important lesson: this has been more than a financial crisis, and there are no simple bailouts. This has been a crisis of institutions not robust enough to sustain the forces of an increasingly global economy. This has also been a crisis of governance—for which the cure must be found in a strong legal system, a fair justice system, and transparent public institutions that work together with the private sector and civil society to produce equitable and sustainable growth.

Another lesson: we must build on a balanced framework that considers the social, economic, physical, institutional, and environmental foundations of a modern market economy. Too often we have built on one pillar while neglecting the others. But how much can we improve human welfare if we ignore environmental degradation? How long will sound economic policy endure in a government beset by corruption? How far can we expand educational opportunities when roads, power, and communications are lacking? These are just some of the challenges we face in trying to lay the foundations for progress in the next century.

Finally, we must recognize that our strongest resource in the fight to eradicate poverty and create opportunities for equitable growth is knowledge. Knowledge comes in many forms, and one of them is information about the state of the world and its people. That is why the *World Development Indicators* is so important. It offers a measured view of the world's people, their institutions, their economy, their environment. By bringing together indicators that cover the full range of development issues, it provides a yardstick for measuring the results of our efforts and for challenging us to make good on our goals for the benefit of all people.

The *World Development Indicators* represents the collective effort of many people and institutions. We remain very grateful to our partners in the United Nations family, the International Monetary Fund, and the World Trade Organization, in national statistical offices, and in private and academic institutions who have shared their knowledge and data with us. As always, we recognize the limitations of our own efforts and welcome your suggestions for improvement.

James D. Wolfensohn
President
The World Bank Group

Acknowledgments

This book and its companion volume, the *World Bank Atlas*, were prepared by a team led by Eric Swanson. The team consisted of Swami Aiyar, Mehdi Akhlaghi, David Cieslikowski, Richard Fix, Masako Hiraga, Demet Kaya, M. H. Saeed Ordoubadi, Sulekha Patel, Lavan Sujarittanonta, K. M. Vijayalakshmi, and Estela Zamora, working closely with other teams in the Development Economics Vice Presidency's Development Data Group. The CD-ROM development team included Mehdi Akhlaghi, Azita Amjadi, Elizabeth Crayford, Reza Farivari, Angelo Kostopoulos, and William Prince. K. Sarwar Lateef served as adviser to the team and provided substantial inputs. The work was carried out under the management of Shaida Badiee.

The choice of indicators and textual content was shaped through close consultation with and substantial contributions from staff in the World Bank's four thematic networks—Environmentally and Socially Sustainable Development; Finance, Private Sector, and Infrastructure; Human Development; and Poverty Reduction and Economic Management—and staff of the International Finance Corporation and the Multilateral Investment Guarantee Agency. Most important, we received substantial help, guidance, and data from our external partners. For individual acknowledgments of contributions to the book's content, please see the *Credits* section. For a listing of our key partners, see the *Partners* section.

Bruce Ross-Larson was the principal editor, and Peter Grundy, the art director. The cover and page design and the layout and desktopping were done by Communications Development Incorporated, with Grundy & Northedge of London. Staff from External Affairs oversaw publication and dissemination of the book.

Preface

The *World Development Indicators*, now in its third year, is the World Bank's most general statistical publication. Along with its companions, the *World Bank Atlas* and the *World Development Indicators* CD-ROM, it offers a broad view of the record of development and the condition of the world and its people. It also provides a continuing survey of the quality and availability of internationally comparable indicators.

The organization of the *World Development Indicators* reflects a comprehensive development framework that integrates the measures of social progress and the quality of life of people with those of economic development, physical infrastructure, government policy and performance, and the condition of the environment. In this year's edition new indicators have been added to the *People* section, providing data on wages and earnings, expanded coverage of education, and a full table on the global HIV/AIDS epidemic. The *Environment* section includes two new tables: one of city-level indicators and another that extends last year's measures of genuine savings to 121 economies. The other sections have been revised as needed while preserving the now-familiar order and layout of the book.

The *World Development Indicators* also tracks progress toward the international development goals adopted by the World Bank, the United Nations, and the Development Assistance Committee of the OECD. This year the opening *World View* section reports on the prospects for developing countries in the aftermath of the financial crisis that swept much of the world. It is too soon to draw conclusions—indeed, we are only beginning to measure the effects. What is clear is that the world cannot afford another lost decade like the one Latin America endured after the debt crisis of the 1980s. Such a setback would put all our goals out of reach and leave millions of people in still greater distress.

Like everyone who uses these indicators, we remain concerned with the quality, coverage, and timeliness. As in previous editions, each table is followed by a discussion of the data, short descriptions of the indicators, and the sources for each of them. Despite the enormous improvements in communications and information management in the past decade, the gathering of statistical information remains difficult, costly, and time-consuming.

The scope of the *World Development Indicators* reflects the efforts of many groups and organizations to survey, measure, and otherwise compile all the necessary data. We continue to depend on the support and cooperation of our many partners—who make this publication possible. We are grateful to each of the international organizations, statistical offices, nongovernmental organizations, and private firms that have provided their data and contributed to this product. We also appreciate the comments and responses from users—helping us measure how we are doing in continuing to make the *World Development Indicators* a useful tool. So, please write to us at info@worldbank.org. And for more information on the World Bank's statistical publications, please visit our website at http://www.worldbank.org and select *data* from the menu.

Shaida Badiee
Director
Development Data Group

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NEW FEATURES

- **_World View_ includes a new table that contrasts the status of men and women, and of boys and girls, using key social indicators. In table 1.1 surface area—a country's total land area including areas under inland bodies of water—has replaced land area as the measure of size. Table 1.3 shows indicators that measure progress toward the international development goals, and the introduction looks at how the financial crisis has affected the prospects of attaining those goals.**

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NEW FEATURES

● ***People*** **includes a new table on wages and productivity and expands coverage of health with a new table on the HIV/AIDS epidemic. The introduction discusses the state of education in developing countries and the policies and strategies needed to achieve the goals set by the World Conference on Education for All.**

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NEW FEATURES

● ***Environment*** **contains two new tables. Table 3.11 covers urban living conditions in selected cities around the world, and table 3.15 presents a new indicator—genuine savings—along with the data used to construct it. The introduction discusses why developing new measures of environmental sustainability is important—and why it is difficult.**

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NEW FEATURES

- ***Economy* includes indicators on merchandise trade that were presented in *Global Links* last year. The introduction surveys the state of the economy in each of the developing regions and looks at the effects of the global financial crisis.**

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NEW FEATURES

- **The introduction to *States and Markets* explains why good governance matters in development and presents results from World Bank research on the sources of corruption. Table 5.9 adds data on diesel locomotives.**

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NEW FEATURES

- ***Global Links* provides expanded coverage of tariff rates in table 6.6, including data for more countries than last year and more recent data for some countries. The introduction discusses the benefits and risks of globalization. Data on growth of merchandise trade have been moved to *Economy*.**

Partners

Defining, gathering, and disseminating international statistics is a collective effort of many people and organizations. The indicators presented in the *World Development Indicators* are the fruit of decades of work at many levels, from the field workers who administer censuses and household surveys to the committees and working parties of the national and international statistical agencies that develope the nomenclature, classifications, and standards that are fundamental to an international statistical system. Nongovernmental organizations and the private sector have also made important contributions, both in gathering primary data and in organizing and publishing their results. And academic researchers have played a crucial role in developing statistical methods and carrying on a continuing dialogue about the quality and interpretation of statistical indicators. All these contributors have a strong belief that available, accurate data will improve the quality of public and private decisionmaking.

The organizations listed here have made the *World Development Indicators* possible by sharing their data and their expertise with us. More important, their collaboration contributes to the success of the World Bank's efforts, and to those of many others, to improve the quality of life of the world's people. We acknowledge our debt and gratitude to all who have helped to build a base of comprehensive, quantitative information about the world and its people. For your convenience we have included URLs (Web addresses) for organizations that maintain websites. The addresses shown were active on 1 March 1999. Information about the World Bank is also provided.

International and government agencies

The Carbon Dioxide Information Analysis Center

The Carbon Dioxide Information Analysis Center (CDIAC) is the primary global change data and information analysis center of the U.S. Department of Energy. CDIAC's scope includes potentially anything that would be of value to users concerned with the greenhouse effect and global climate change, including concentrations of carbon dioxide and other radiatively active gases in the atmosphere; the role of the terrestrial biosphere and the oceans in the biogeochemical cycles of greenhouse gases; emissions of carbon dioxide to the atmosphere; long-term climate trends; the effects of elevated carbon dioxide on vegetation; and the vulnerability of coastal areas to rising sea level. For information contact CDIAC, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6335, U.S.A.; telephone: (423) 574 0390; fax: (423) 574 2232; email: cdiac@ornl.gov; website: cdiac.esd.ornl.gov.

Food and Agriculture Organization

The Food and Agriculture Organization (FAO), a specialized agency of the United Nations, was founded in October 1945 with a mandate to raise nutrition levels and living standards, to increase agricultural productivity, and to better the condition of rural populations. The organization provides direct development assistance; collects, analyzes, and disseminates information; offers policy and planning advice to governments; and serves as an international forum for debate on food and agricultural issues.

Statistical publications of the FAO include the *Production Yearbook, Trade Yearbook,* and *Fertilizer Yearbook.* The FAO makes much of its data available on diskette through its Agrostat PC system. FAO publications can be ordered from national sales agents or directly from the FAO

Sales and Marketing Group, Viale delle Terme di Caracalla, 00100 Rome, Italy; email: Publications-sales@fao.org; website: www.fao.org.

International Civil Aviation Organisation

The International Civil Aviation Organisation (ICAO), a specialized agency of the United Nations, was founded on 7 December 1944. It is responsible for establishing international standards and recommended practices and procedures for the technical, economic, and legal aspects of international civil aviation operations. The ICAO promotes the adoption of safety measures, establishes visual and instrument flight rules for pilots and crews, develops aeronautical charts, coordinates aircraft radio frequencies, and sets uniform regulations for the operation of air services and customs procedures.

To obtain ICAO publications contact ICAO, Document Sales Unit, 999 University Street, Montreal, Quebec H3C 5H7, Canada; telephone: (514) 954 8022; fax: (514) 954 6769; email: sales_unit@icao.org; website: www.icao.int.

International Labour Organisation

The International Labour Organisation (ILO), a specialized agency of the United Nations, seeks the promotion of social justice and internationally recognized human and labor rights. Founded in 1919, it is the only surviving major creation of the Treaty of Versailles, which brought the League of Nations into being. It became the first specialized agency of the United Nations in 1946. Unique within the United Nations system, the ILO's tripartite structure has workers and employers participating as equal partners with governments in the work of its governing organs. As part of its mandate, the ILO maintains an extensive statistical publication program. *Yearbook of Labour Statistics* is its most comprehensive collection of labor force data.

Publications can be ordered from the International Labour Office, 4 route des Morillons, CH-1211 Geneva 22, Switzerland, or from sales agents and major booksellers throughout the world and ILO offices in many countries. Fax: (41 22) 799 85 78; email: cabrera@ilo.org; website: www.ilo.org.

International Monetary Fund

The International Monetary Fund (IMF) was established at a conference in Bretton Woods, New Hampshire, U.S.A., on 1–22 July 1944. (The conference also established the World Bank.) The IMF came into official existence on 27 December 1945, and commenced financial operations on 1 March 1947. It currently has 181 member countries.

The statutory purposes of the IMF are to promote international monetary cooperation, facilitate the expansion and balanced growth of international trade, promote exchange rate stability, help establish a multilateral payments system, make the general resources of the IMF temporarily available to its members under adequate safeguards, and shorten the duration and lessen the degree of disequilibrium in the international balances of payments of members.

The IMF maintains an extensive program for the development and compilation of international statistics, and is responsible for collecting and reporting statistics on international financial transactions and the balance of payments. In April 1996 it undertook an important initiative aimed at improving the quality of international statistics, establishing the Special Data Dissemination

Standard to guide members that have or seek access to international capital markets in providing economic and financial data to the public.

The IMF's major statistical publications include *International Financial Statistics*, *Balance of Payments Statistics Yearbook*, *Government Finance Statistics Yearbook*, and *Direction of Trade Statistics Yearbook*.

For more information on IMF statistical publications contact the International Monetary Fund, Publications Services, Catalog Orders, 700 19th Street, N.W., Washington, D.C. 20431, U.S.A.; telephone: (202) 623 7430; fax: (202) 623 7201; telex: RCA 248331 IMF UR; email: pubweb@imf.org; website: www.imf.org; SDDS bulletin board: dsbb.imf.org.

International Telecommunication Union

Founded in Paris in 1865 as the International Telegraph Union, the International Telecommunication Union (ITU) took its current name in 1934 and became a specialized agency of the United Nations in 1947. The ITU is an intergovernmental organization within which the public and private sectors cooperate for the development of telecommunications. The ITU adopts international regulations and treaties governing all terrestrial and space uses of the frequency spectrum and the use of the geostationary-satellite orbit. It also develops standards for the interconnection of telecommunications systems worldwide. The ITU fosters the development of telecommunications in developing countries by establishing medium-term development policies and strategies in consultation with other partners in the sector and providing specialized technical assistance in management, telecommunications policy, human resource management, research and development, technology choice and transfer, network installation and maintenance, and investment financing and resource mobilization.

The *Telecommunications Yearbook* is the ITU's main statistical publication. Publications can be ordered from ITU Sales and Marketing Service, Place des Nations, CH-1211 Geneva 20, Switzerland; telephone: (41 22) 730 6141 (English), (41 22) 730 6142 (French), and (41 22) 730 6143 (Spanish); fax: (41 22) 730 5194; email: sales.online@itu.ch; telex: 421 000 uit ch; telegram: ITU GENEVE; website: www.itu.ch.

Organisation for Economic Co-operation and Development

The Organisation for Economic Co-operation and Development (OECD) was set up in 1948 as the Organisation for European Economic Co-operation (OEEC) to administer Marshall Plan funding in Europe. In 1960, when the Marshall Plan had completed its task, the OEEC's member countries agreed to bring in Canada and the United States to form an organization to coordinate policy among industrial countries.

The OECD is the international organization of the industrialized, market economy countries. Representatives of member countries meet at the OECD to exchange information and harmonize policy with a view to maximizing economic growth in member countries and helping nonmember countries develop more rapidly. The OECD has set up a number of specialized committees to further its aims. One of these is the Development Assistance Committee (DAC), whose members have agreed to coordinate their policies on assistance to developing and transition economies. Also associated with the OECD are several agencies or bodies that have their own governing statutes, including the International Energy Agency (IEA) and the Centre for Co-operation with Economies in Transition.

The OECD's main statistical publications include *Geographical Distribution of Financial Flows to Developing Countries*, *National Accounts of OECD Countries*, *Labour Force Statistics*, *Revenue*

Statistics of OECD Member Countries, International Direct Investment Statistics Yearbook, Basic Science and Technology Statistics, Industrial Structure Statistics, and *Services: Statistics on International Transactions.*

For information on OECD publications contact OECD, 2, rue André-Pascal, 75775 Paris Cedex 16, France; telephone: (33 1) 45 24 82 00; fax: (33 1) 49 10 42 76; email: sales@oecd.org; websites: www.oecd.org and www.oecdwash.org.

United Nations

The United Nations and its specialized agencies maintain a number of programs for the collection of international statistics, some of which are described elsewhere in this book. At United Nations headquarters the Statistics Division of the Department of Economic and Social Information and Policy Analysis provides a wide range of statistical outputs and services for producers and users of statistics worldwide.

The Statistics Division publishes statistics on international trade, national accounts, demography and population, gender, industry, energy, environment, human settlements, and disability. Its major statistical publications include the *International Trade Statistics Yearbook, Yearbook of National Accounts,* and *Monthly Bulletin of Statistics,* along with general statistics compendiums such as the *Statistical Yearbook* and *World Statistics Pocketbook.*

For publications contact United Nations Publications, Room DC2 853, 2 UN Plaza, New York, NY 10017, U.S.A.; telephone: (212) 963 8302 or (800) 253 9646 (toll free); fax: (212) 963 3489; email: publications@un.org; website: www.un.org.

United Nations Centre for Human Settlements (Habitat), Global Urban Observatory

The Urban Indicators Programme (UIP) of UNCHS (Habitat) was established to address the urgent global need to improve the urban knowledge base by helping countries and cities design, collect, and apply policy-oriented indicators related to urban development at the city level. In 1997 the UIP was integrated into the Global Urban Observatory (GUO), the principal United Nations programme for monitoring urban conditions and trends and for tracking progress in implementing the goals of the Habitat Agenda. With the Urban Indicators and Best Practices programmes, the GUO is establishing a worldwide information, assessment, and capacity building network to help governments, local authorities, the private sector, NGOs, and other organizations of civil society. Contact Christine Auclair (guo@unchs.org), Urban Indicators Programme, Global Urban Observatory, UNCHS (Habitat), P.O. Box 30030, Nairobi, Kenya; tel (2542) 623694; fax: (2542) 624266/7; website: www.urbanobservatory.org.

United Nations Children's Fund

The United Nations Children's Fund (UNICEF), the only organization of the United Nations dedicated exclusively to children, works with other United Nations bodies and with governments and nongovernmental organizations to improve children's lives in more than 140 developing countries through community-based services in primary health care, basic education, and safe water and sanitation.

UNICEF's major publications include *The State of the World's Children* and *The Progress of Nations.*

For information on UNICEF publications contact UNICEF House, 3 United Nations Plaza, New York, N.Y. 10017, U.S.A.; telephone: (212) 326 7000; fax: (212) 888 7465 or 7454; telex: RCA-239521; email: publications@un.org; website: www.unicef.org.

Partners

United Nations Conference on Trade and Development

The United Nations Conference on Trade and Development (UNCTAD) is the principal organ of the United Nations General Assembly in the field of trade and development. It was established as a permanent intergovernmental body in 1964 in Geneva with a view to accelerating economic growth and development, particularly in developing countries. UNCTAD discharges its mandate through policy analysis; intergovernmental deliberations, consensus building, and negotiation; monitoring, implementation, and follow-up; and technical cooperation.

UNCTAD produces a number of publications containing trade and economic statistics, including the *Handbook of International Trade and Development Statistics.*

For information contact UNCTAD, Palais des Nations, CH-1211 Geneva 10, Switzerland; telephone: (41 22) 907 12 34 or 917 12 34; fax: (41 22) 907 00 57; telex: 42962; email: reference.service@unctad.org; website: www.unctad.org.

United Nations Educational, Scientific, and Cultural Organization

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) is a specialized agency of the United Nations established in 1945 to promote "collaboration among nations through education, science, and culture in order to further universal respect for justice, for the rule of law, and for the human rights and fundamental freedoms . . . for the peoples of the world, without distinction of race, sex, language, or religion . . ."

UNESCO's principal statistical publications are the *Statistical Yearbook, World Education Report* (biennial), and *Basic Education and Literacy: World Statistical Indicators.*

For publications contact UNESCO Publishing, Promotion, and Sales Division, 1, rue Miollis F, 75732 Paris Cedex 15, France; fax: (33 1) 45 68 57 41; email: publishing.promotion@unesco.org; website: www.unesco.org.

United Nations Environment Programme

The mandate of the United Nations Environment Programme (UNEP) is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and people to improve their quality of life without compromising that of future generations. UNEP publications include *Global Environment Outlook* and *Our Planet* (a bimonthly magazine). For information contact UNEP, P.O. Box 30552, Nairobi, Kenya; telephone: (254 2) 62 1234 or 3292; fax: (254 2) 62 3927 or 3692; email: oedinfo@unep.org; website: www.unep.org.

United Nations Industrial Development Organization

The United Nations Industrial Development Organization (UNIDO) was established in 1966 to act as the central coordinating body for industrial activities and to promote industrial development and cooperation at the global, regional, national, and sectoral levels. In 1985 UNIDO became the sixteenth specialized agency of the United Nations, with a mandate to help develop scientific and technological plans and programs for industrialization in the public, cooperative, and private sectors.

UNIDO's databases and information services include the Industrial Statistics Database (INDSTAT), Commodity Balance Statistics Database (COMBAL), Industrial Development Abstracts (IDA), and the International Referral System on Sources of Information. Among its publications is the *International Yearbook of Industrial Statistics.*

For information contact UNIDO Public Information Section, Vienna International Centre, P.O. Box 300, A-1400 Vienna, Austria; telephone: (43 1) 260 26 5031; fax: (43 1) 213 46 5031 or 260 26 6843; email: publications@unido.org; website: www.unido.org.

United States Arms Control and Disarmament Agency

The mission of the United States Arms Control and Disarmament Agency (ACDA) is to strengthen the national security of the United States by formulating, advocating, negotiating, implementing, and verifying effective arms control, nonproliferation, and disarmament policies, strategies, and agreements. In so doing, ACDA ensures that arms control is fully integrated into the development and conduct of U.S. national security policy. On 18 April 1998 ACDA began integrating with the U.S. Department of State, merging both agencies' related arms control and nonproliferation functions. For publications contact ACDA, 320 21st Street, N.W., Washington, D.C. 20451, U.S.A.; (800) 581 2232; fax: (202) 647 6928; website: www.acda.gov.

The World Bank Group

The World Bank Group is made up of five organizations: the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Centre for Settlement of Investment Disputes (ICSID).

Established in 1944 at a conference of world leaders in Bretton Woods, New Hampshire, the World Bank is a lending institution whose aim is to help integrate developing and transition countries with the global economy, and reduce poverty by promoting economic growth. The Bank lends for policy reforms and development projects and provides policy advice, technical assistance, and nonlending services to its 181 member countries.

For information about the World Bank visit our website at www.worldbank.org. For more information about development data contact the Development Data Center, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A.; telephone: (800) 590 1906 or (202) 473 7824; fax: (202) 522 1498; email: info@worldbank.org; website: www.worldbank.org/data.

The World Health Organization

The constitution of the World Health Organization (WHO) was adopted on 22 July 1946 by the International Health Conference, convened in New York by the Economic and Social Council. The objective of the WHO, a specialized agency of the United Nations, is the attainment by all people of the highest possible level of health. The WHO carries out a wide range of functions, including coordinating international health work; helping governments strengthen health services; providing technical assistance and emergency aid; working for the prevention and control of disease; promoting improved nutrition, housing, sanitation, recreation, and economic and working conditions; promoting and coordinating biomedical and health services research; promoting improved standards of teaching and training in health and medical professions; establishing international standards for biological, pharmaceutical, and similar products; and standardizing diagnostic procedures.

The WHO publishes the *World Health Statistics Annual* and many other technical and statistical publications.

For publications contact Distribution and Sales, Division of Publishing, Language, and Library Services, World Health Organization Headquarters, CH-1211 Geneva 27, Switzerland; telephone: (41 22) 791 2476 or 2477; fax: (41 22) 791 4857; email: publications@who.ch; website: www.who.ch.

The World Intellectual Property Organization

The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations based in Geneva, Switzerland. The objectives of WIPO are to promote the protection of intellectual property throughout the world through cooperation among states and, where appropriate, in collaboration with other international organizations and to ensure administrative cooperation among the intellectual property unions—that is, the "unions" created by the Paris and Berne Conventions and several subtreaties concluded by members of the Paris Union. WIPO is responsible for administering various multilateral treaties dealing with the legal and administrative aspects of intellectual property. A substantial part of WIPO's activities and resources is devoted to development cooperation with developing countries.

For information contact the World Intellectual Property Organization, 34, chemin des Colombettes, Geneva, Switzerland; mailing address: P.O. Box 18, CH-1211 Geneva 20, Switzerland; telephone: (41 22) 338 9111; fax: (41 22) 733 5428; telex: 412912 ompi ch; email: publications.mail@wipo.int; website: www.wipo.int.

World Trade Organization

The World Trade Organization (WTO), established on 1 January 1995, is the successor to the General Agreement on Tariffs and Trade (GATT). The WTO provides the legal and institutional foundation of the multilateral trading system and embodies the results of the Uruguay Round of trade negotiations, which ended with the Marrakesh Declaration of 15 April 1994. The WTO is mandated to administer and implement multilateral trade agreements, serving as a forum for multilateral trade negotiations, seeking to resolve trade disputes, overseeing national trade policies, and cooperating with other international institutions involved in global economic-policymaking.

The WTO's Statistics and Information Systems Divisions compile statistics on world trade and maintain the Integrated Database, which contains the basic records of the outcome of the Uruguay Round. The *WTO Annual Report* includes a statistical appendix.

For publications contact World Trade Organization, Publications Services, Centre William Rappard, 154 rue de Lausanne, CH-1211, Geneva, Switzerland; telephone: (41 22) 739 5208 or 5308; fax: (41 22) 739 5458; email: publications@wto.org; website: www.wto.org.

Private and nongovernmental organizations

Currency Data & Intelligence, Inc.

Currency Data & Intelligence, Inc. is a research and publishing firm that produces currency-related products and undertakes research for international agencies and universities worldwide. Its flagship product, the *World Currency Yearbook*, is the most comprehensive source of information on currency. It includes official and unofficial exchange rates and discussions of economic, social, and political issues that affect the value of currencies in world markets. A second publication, the monthly *Global Currency Report*, covers devaluations and other critical developments in exchange rate restrictions and valuations and provides parallel market exchange rates.

For information contact Currency Data & Intelligence, Inc., 328 Flatbush Avenue, Suite 344, Brooklyn, N.Y. 11238, U.S.A.; telephone: (718) 230 7176; fax: (718) 230 1992; email: curncydata@aol.com; website: pacific.commerce.ubc.ca/xr/cdi/.

Euromoney Publications PLC

Euromoney Publications PLC provides a wide range of financial, legal, and general business information. The monthly *Euromoney* magazine carries a semiannual rating of country creditworthiness.

For information contact Euromoney Publications PLC, Nestor House, Playhouse Yard, London EC4V 5EX, U.K.; telephone: (44 171) 779 8888; fax: (44 171) 779 8656; telex: 2907002; email: hotline@euromoneyplc.com; website: www.euromoney.com.

Institutional Investor, Inc.

Institutional Investor magazine is published monthly by Institutional Investor, Inc., which develops country credit ratings every six months based on information provided by leading international banks.

For information contact Institutional Investor, Inc., 488 Madison Avenue, New York, N.Y. 10022, U.S.A.; telephone: (212) 224 3300; email: info@iimagazine.com; website: www.iimagazine.com.

International Road Federation

The International Road Federation (IRF) is a not-for-profit, nonpolitical service organization. Its purpose is to encourage better road and transportation systems worldwide and to help apply technology and management practices that will maximize economic and social returns from national road investments. The IRF has led global road infrastructure developments and is the international point of affiliation for about 600 member companies, associations, and governments.

The IRF's mission is to promote road development as a key factor in economic and social growth, to provide governments and financial institutions with professional ideas and expertise, to facilitate business exchange among members, to establish links between IRF members and external institutions and agencies, to support national road federations, and to give information to professional groups.

The IRF publishes *World Road Statistics.*

Contact the Geneva office: 2 chemin de Blandonnet, CH-1214 Vernier, Geneva, Switzerland; telephone: (41 22) 306 0260; fax: (41 22) 306 0270; or the Washington, D.C. office: The Watergate Office Building, 2600 Virginia Avenue, N.W., Suite 208, Washington, D.C. 20037, U.S.A.; telephone: (202) 338 4641; fax: (202) 338 8104; email: info@irfnet.com; website: www.irfnet.org.

Moody's Investors Service

Moody's Investors Service is a global credit analysis and financial opinion firm. It provides the international investment community with globally consistent credit ratings on debt and other securities issued by North American state and regional government entities, by corporations worldwide, and by some sovereign issuers. It also publishes extensive financial data in both print and electronic form. Clients of Moody's Investors Service include investment banks, brokerage firms, insurance companies, public utilities, research libraries, manufacturers, and government agencies and departments.

Moody's publishes *Sovereign, Subnational and Sovereign-Guaranteed Issuers.*

For information contact Moody's Investors Service, 99 Church Street, New York, N.Y. 10007, U.S.A.; telephone: (212) 553 1658; website: www.moodys.com.

Partners

The PRS Group

Political Risk Services is a global leader in political and economic risk forecasting and market analysis and has served international companies large and small for about 20 years. The data it contributed to this year's *World Development Indicators* come from the *International Country Risk Guide*, a monthly publication that monitors and rates political, financial, and economic risk in 140 countries. The guide's data series and commitment to independent and unbiased analysis make it the standard for any organization practicing effective risk management.

For information contact The PRS Group, 6320 Fly Road, Suite 102, P.O. Box 248, East Syracuse, N.Y. 13057-0248, U.S.A.; telephone: (315) 431 0511; fax: (315) 431 0200; email: custserv@PRSSgroup.com; website: www.prsgroup.com.

PricewaterhouseCoopers

Drawing on the talents of more than 140,000 people in 152 countries, PricewaterhouseCoopers, formed by the merger of Price Waterhouse and Coopers & Lybrand, provides a full range of business advisory services to leading global, national, and local companies and public institutions. These services include audit, accounting, and tax advice; management, information technology, and human resource consulting; financial advisory services, including mergers and acquisitions, business recovery, project finance, and litigation support; business process outsourcing services; and legal advice through a global network of affiliated law firms.

PricewaterhouseCoopers publishes *Corporate Taxes 1998: Worldwide Summaries* and *Individual Taxes 1998: Worldwide Summaries*.

For information contact PricewaterhouseCoopers, 1301 Avenue of the Americas, New York, N.Y. 10019; telephone: (212) 596 7000; fax: (212) 259 5324; website: www.pwcglobal.com.

Standard and Poor's Rating Services

Standard and Poor's *Sovereign Ratings* provides issuer and local and foreign currency debt ratings for sovereign governments and for sovereign-supported and supranational issuers worldwide. Standard & Poor's Rating Services monitors the credit quality of $1.5 trillion worth of bonds and other financial instruments and offers investors global coverage of debt issuers. Standard & Poor's also has ratings on commercial paper, mutual funds, and the financial condition of insurance companies worldwide.

For information contact The McGraw-Hill Companies, Inc., Executive Offices, 1221 Avenue of the Americas, New York, N.Y. 10020, U.S.A.; telephone: (212) 512 4105 or (800) 352 3566 (toll free); fax: (212) 512 4105; email: ratings@mcgraw-hill.com; website: www.ratings.standardpoor.com.

World Conservation Monitoring Centre

The World Conservation Monitoring Centre (WCMC) provides information on the conservation and sustainable use of the world's living resources and helps others to develop information systems of their own. It works in close collaboration with a wide range of organizations and people to increase access to the information needed for wise management of the world's living resources. Committed to the principle of data exchange with other centers and noncommercial users, the WCMC, whenever possible, places the data it manages in the public domain.

For information contact World Conservation Monitoring Centre, 219 Huntingdon Road, Cambridge CB3 0DL, U.K.; telephone: (44 12) 2327 7314; fax: (44 12) 2327 7136; email: info@wcmc.org.uk; website: www.wcmc.org.uk.

World Resources Institute

The World Resources Institute is an independent center for policy research and technical assistance on global environmental and development issues. The institute provides—and helps other institutions provide—objective information and practical proposals for policy and institutional change that will foster environmentally sound, socially equitable development. The institute's current areas of work include trade, forests, energy, economics, technology, biodiversity, human health, climate change, sustainable agriculture, resource and environmental information, and national strategies for environmental and resource management.

For information contact World Resources Institute, 10 G Street, N.E., Washington, D.C. 20002, U.S.A.; telephone: (202) 729 7600; fax: (202) 729 7610; telex 64414 WRIWASH; email: lauralee@wri.org; website: www.wri.org.

Users guide

1

Principal sections

Are signposted by these icons:

Section 1 World view

Section 2 People

Section 3 Environment

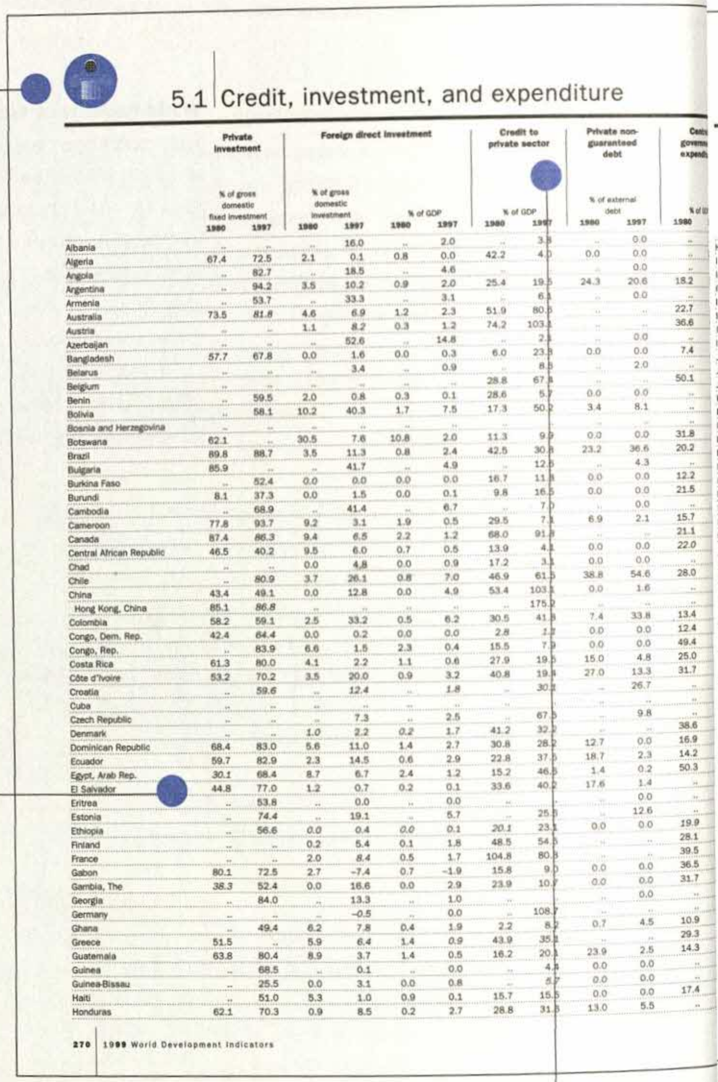
Section 4 Economy

Section 5 States and markets

Section 6 Global links

The tables

Tables are numbered by section and display the identifying icons of each section. Countries and economies are listed alphabetically (except for Hong Kong, China, which appears after China). Data are shown for 148 economies with populations of more than 1 million people and for which data are regularly reported by the relevant authority, as well as Taiwan, China, in selected tables. Selected indicators for 62 other economies—small economies with populations between 30,000 and 1 million, smaller economies if they are members of the World Bank, and larger economies for which data are not regularly reported—are shown in table 1.6. The term *country*, used interchangeably with *economy*, does not imply political independence or official recognition by the World Bank, but refers to any territory for which authorities report separate social or economic statistics. When available, aggregate measures for income and regional groups appear at the end of each table.



5.1 Credit, investment, and expenditure

	Private investment		Foreign direct investment				Credit to private sector		Private non-guaranteed debt		Cent governm expend
	% of gross domestic fixed investment		% of gross domestic investment		% of GDP		% of GDP		% of external debt		% of G
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980
Albania	..	..	..	16.0	..	2.0	..	3.8	..	0.0	..
Algeria	67.4	72.5	2.1	0.1	0.8	0.0	42.2	4.0	0.0	0.0	..
Angola	..	82.7	..	18.5	..	4.6	..		..	0.0	..
Argentina	..	94.2	3.5	10.2	0.9	2.0	25.4	19.5	24.3	20.6	18.2
Armenia	..	53.7	..	33.3	..	3.1	..	6.1	..	0.0	..
Australia	73.5	*81.8*	4.6	6.9	1.2	2.3	51.9	80.5	..	..	22.7
Austria	..	..	1.1	*8.2*	0.3	1.2	74.2	103.1	..	..	36.6
Azerbaijan	..	..	..	52.6	..	14.8	..	2.1	..	0.0	..
Bangladesh	*57.7*	67.8	0.0	1.6	0.0	0.3	6.0	23.8	0.0	0.0	7.4
Belarus	..	..	..	3.4	..	0.9	..	8.5	..	2.0	..
Belgium	..	..	..	..	..	..	28.8	67.8	..	..	50.1
Benin	..	59.5	2.0	0.8	0.3	0.1	28.6	5.7	0.0	0.0	..
Bolivia	..	58.1	10.2	40.3	1.7	7.5	17.3	50.2	3.4	8.1	..
Bosnia and Herzegovina	..	..	..	..	..	..	..		..	..	..
Botswana	62.1	..	30.5	7.6	10.8	2.0	11.3	9.9	0.0	0.0	31.8
Brazil	89.8	88.7	3.5	11.3	0.8	2.4	42.5	30.8	23.2	36.6	20.2
Bulgaria	85.9	..	..	41.7	..	4.9	..	12.5	..	4.3	..
Burkina Faso	..	52.4	*0.0*	0.0	0.0	0.0	16.7	11.8	0.0	0.0	12.2
Burundi	8.1	37.3	0.0	1.5	0.0	0.1	9.8	16.5	0.0	0.0	21.5
Cambodia	..	68.9	..	41.4	..	6.7	..	7.0	..	0.0	..
Cameroon	77.8	93.7	9.2	3.1	1.9	0.5	29.5	7.1	6.9	2.1	15.7
Canada	87.4	*86.3*	9.4	*6.5*	2.2	1.2	68.0	91.8	..	..	21.1
Central African Republic	46.5	40.2	9.5	6.0	0.7	0.5	13.9	4.1	0.0	0.0	*22.0*
Chad	..	..	0.0	4.8	0.0	0.9	17.2	3.1	0.0	0.0	..
Chile	..	*80.9*	3.7	26.1	0.8	7.0	46.9	61.5	38.8	54.6	28.0
China	43.4	49.1	0.0	12.8	0.0	4.9	53.4	103.1	0.0	1.6	..
Hong Kong, China	85.1	*86.8*	..	..	..	..	..	175.2	..	..	..
Colombia	58.2	59.1	2.5	33.2	0.5	6.2	30.5	41.8	7.4	33.8	13.4
Congo, Dem. Rep.	42.4	*64.4*	0.0	0.2	0.0	0.0	*2.8*	*1.2*	0.0	0.0	12.4
Congo, Rep.	..	83.9	6.6	1.5	2.3	0.4	15.5	7.9	0.0	0.0	49.4
Costa Rica	61.3	80.0	4.1	2.2	1.1	0.6	27.9	19.5	15.0	4.8	25.0
Côte d'Ivoire	53.2	70.2	3.5	20.0	0.9	3.2	40.8	19.4	27.0	13.3	31.7
Croatia	..	*59.6*	..	*12.4*	..	*1.8*	..	*30.1*	..	26.7	..
Cuba	..	..	..	..	..	..	..		..	..	..
Czech Republic	..	..	..	7.3	..	2.5	..	67.5	..	9.8	..
Denmark	..	..	*1.0*	2.2	*0.2*	1.7	41.2	32.2	..	..	38.6
Dominican Republic	68.4	83.0	5.6	11.0	1.4	2.7	30.8	28.2	12.7	0.0	16.9
Ecuador	59.7	82.9	2.3	14.5	0.6	2.9	22.8	37.5	18.7	2.3	14.2
Egypt, Arab Rep.	*30.1*	68.4	8.7	6.7	2.4	1.2	15.2	46.5	1.4	0.2	50.3
El Salvador	44.8	77.0	1.2	0.7	0.2	0.1	33.6	40.2	17.6	1.4	..
Eritrea	..	53.8	..	0.0	..	0.0	..		..	0.0	..
Estonia	..	*74.4*	..	19.1	..	5.7	..	25.5	..	12.6	..
Ethiopia	..	56.6	*0.0*	0.4	*0.0*	0.1	*20.1*	23.1	0.0	0.0	*19.9*
Finland	..	..	0.2	5.4	0.1	1.8	48.5	54.5	..	..	28.1
France	..	..	2.0	*8.4*	0.5	1.7	104.8	80.8	..	..	39.5
Gabon	80.1	72.5	2.7	–7.4	0.7	–1.9	15.8	9.0	0.0	0.0	36.5
Gambia, The	*38.3*	52.4	0.0	16.6	0.0	2.9	23.9	10.7	0.0	0.0	31.7
Georgia	..	84.0	..	13.3	..	1.0	..		..	0.0	..
Germany	..	..	..	*–0.5*	..	0.0	..	108.7	..	..	..
Ghana	..	49.4	6.2	7.8	0.4	1.9	2.2	8.2	0.7	4.5	10.9
Greece	51.5	..	5.9	*6.4*	1.4	*0.9*	43.9	35.1	..	..	29.3
Guatemala	63.8	80.4	8.9	3.7	1.4	0.5	16.2	20.1	23.9	2.5	14.3
Guinea	..	68.5	..	0.1	..	0.0	..	4.4	0.0	0.0	..
Guinea-Bissau	..	25.5	0.0	3.1	0.0	0.8	..	*5.7*	*0.0*	0.0	..
Haiti	..	51.0	5.3	1.0	0.9	0.1	15.7	15.5	0.0	0.0	17.4
Honduras	62.1	70.3	0.9	8.5	0.2	2.7	28.8	31.5	13.0	5.5	..

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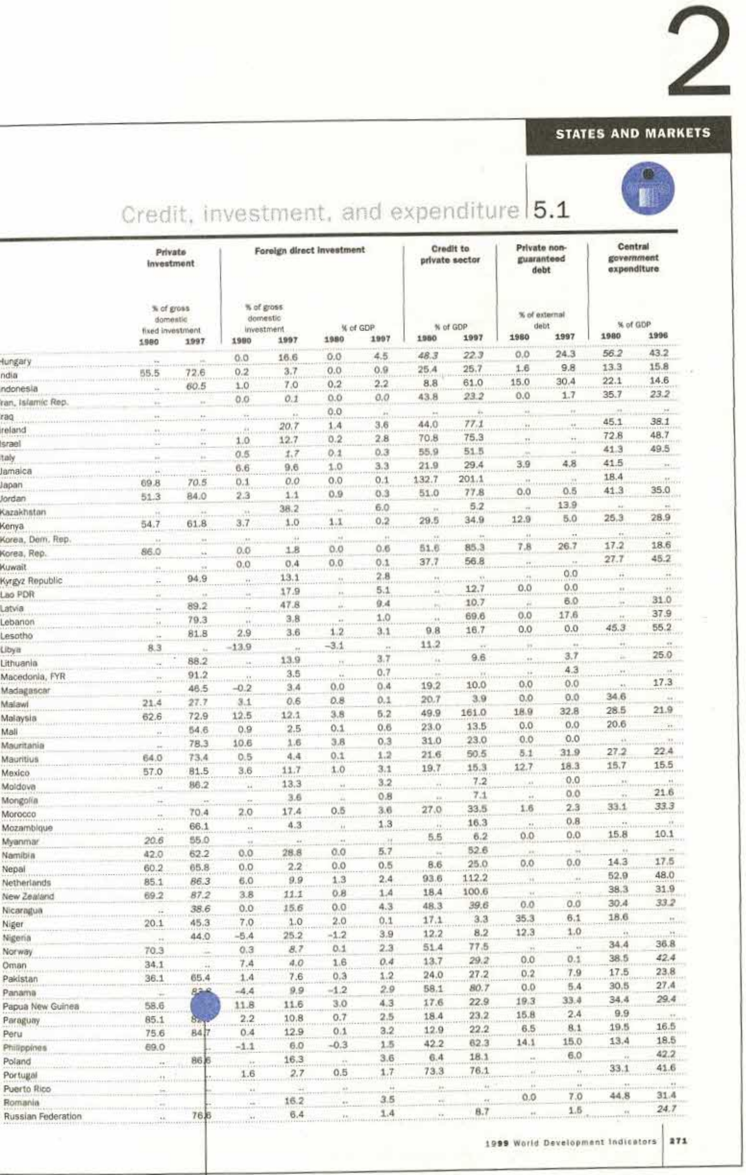
Indicators

Indicators are shown for the most recent year or period for which data are available and, in most tables, for an earlier year or period. Time-series data are available in the *World Development Indicators* CD-ROM.



2

STATES AND MARKETS

Credit, investment, and expenditure 5.1

	Private investment		Foreign direct investment				Credit to private sector		Private non-guaranteed debt		Central government expenditure	
	% of gross domestic fixed investment		% of gross domestic investment		% of GDP		% of GDP		% of external debt		% of GDP	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1996
Hungary	..	..	0.0	16.6	0.0	4.5	*48.3*	*22.3*	0.0	24.3	*56.2*	43.2
ndia	55.5	72.6	0.2	3.7	0.0	0.9	25.4	25.7	1.6	9.8	13.3	15.8
ndonesia	..	*60.5*	1.0	7.0	0.2	2.2	8.8	61.0	15.0	30.4	22.1	14.6
ran, Islamic Rep.	..	..	0.0	*0.1*	0.0	*0.0*	43.8	*23.2*	0.0	1.7	35.7	*23.2*
raq	..	..	..	..	0.0	..	..	..	..	..	..	..
reland	..	..	..	*20.7*	1.4	3.6	44.0	*77.1*	..	..	45.1	*38.1*
Israel	..	..	1.0	12.7	0.2	2.8	70.8	75.3	..	..	72.8	48.7
taly	..	..	*0.5*	*1.7*	*0.1*	0.3	55.9	51.5	..	..	41.3	49.5
Jamaica	..	..	6.6	9.6	1.0	3.3	21.9	29.4	3.9	4.8	41.5	..
Japan	69.8	*70.5*	0.1	*0.0*	0.0	0.1	132.7	201.1	..	..	18.4	..
Jordan	51.3	84.0	2.3	1.1	0.9	0.3	51.0	77.8	0.0	0.5	41.3	35.0
Kazakhstan	..	..	..	38.2	..	6.0	..	5.2	..	13.9	..	..
Kenya	54.7	61.8	3.7	1.0	1.1	0.2	29.5	34.9	12.9	5.0	25.3	28.9
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	86.0	..	0.0	1.8	0.0	0.6	51.6	85.3	7.8	26.7	17.2	18.6
Kuwait	..	..	0.0	0.4	0.0	0.1	37.7	56.8	..	..	27.7	45.2
Kyrgyz Republic	..	94.9	..	13.1	..	2.8	..	..	..	0.0	..	..
Lao PDR	..	..	..	17.9	..	5.1	..	12.7	0.0	0.0	..	..
Latvia	..	89.2	..	47.8	..	9.4	..	10.7	..	6.0	..	31.0
Lebanon	..	79.3	..	3.8	..	1.0	..	69.6	0.0	17.6	..	37.9
Lesotho	..	81.8	2.9	3.6	1.2	3.1	9.8	16.7	0.0	0.0	*45.3*	55.2
Libya	8.3	..	–13.9	..	–3.1	..	11.2	..	..	..	..	..
Lithuania	..	88.2	..	13.9	..	3.7	..	9.6	..	3.7	..	25.0
Macedonia, FYR	..	91.2	..	3.5	..	0.7	..	..	..	4.3	..	..
Madagascar	..	46.5	–0.2	3.4	0.0	0.4	19.2	10.0	0.0	0.0	..	17.3
Malawi	21.4	*27.7*	3.1	*0.6*	*0.8*	0.1	20.7	3.9	0.0	0.0	34.6	..
Malaysia	62.6	72.9	12.5	12.1	3.8	5.2	49.9	161.0	18.9	32.8	28.5	21.9
Mali	..	54.6	0.9	2.5	0.1	0.6	23.0	13.5	0.0	0.0	20.6	..
Mauritania	..	78.3	10.6	1.6	3.8	0.3	31.0	23.0	0.0	0.0	..	..
Mauritius	64.0	73.4	0.5	4.4	0.1	1.2	21.6	50.5	5.1	31.9	27.2	22.4
Mexico	57.0	81.5	3.6	11.7	1.0	3.1	19.7	15.3	12.7	18.3	15.7	15.5
Moldova	..	86.2	..	13.3	..	3.2	..	7.2	..	0.0	..	..
Mongolia	..	..	..	3.6	..	0.8	..	7.1	..	0.0	..	21.6
Morocco	..	70.4	2.0	17.4	0.5	3.6	27.0	33.5	1.6	2.3	33.1	*33.3*
Mozambique	..	66.1	..	4.3	..	1.3	..	16.3	..	0.8	..	..
Myanmar	*20.6*	55.0	..	..	..	..	5.5	6.2	0.0	0.0	15.8	10.1
Namibia	42.0	62.2	0.0	28.8	0.0	5.7	..	52.6	..	..	..	..
Nepal	60.2	65.8	0.0	2.2	0.0	0.5	8.6	25.0	0.0	0.0	14.3	17.5
Netherlands	85.1	*86.3*	6.0	*9.9*	1.3	2.4	93.6	112.2	..	..	52.9	48.0
New Zealand	69.2	*87.2*	3.8	*11.1*	0.8	1.4	18.4	100.6	..	..	38.3	31.9
Nicaragua	..	*38.6*	0.0	*15.6*	0.0	4.3	48.3	*39.6*	0.0	0.0	30.4	*33.2*
Niger	20.1	45.3	7.0	1.0	2.0	0.1	17.1	3.3	35.3	6.1	18.6	..
Nigeria	..	44.0	–5.4	25.2	–1.2	3.9	12.2	8.2	12.3	1.0	..	..
Norway	70.3	..	0.3	*8.7*	0.1	2.3	51.4	77.5	..	..	34.4	36.8
Oman	34.1	..	7.4	*4.0*	1.6	*0.4*	13.7	*29.2*	0.0	0.1	38.5	*42.4*
Pakistan	36.1	65.4	1.4	7.6	0.3	1.2	24.0	27.2	0.2	7.9	17.5	23.8
Panama	..	[illegible]	–4.4	*9.9*	–1.2	2.9	58.1	*80.7*	0.0	5.4	30.5	27.4
Papua New Guinea	58.6	[illegible]	11.8	11.6	3.0	4.3	17.6	22.9	19.3	33.4	34.4	*29.4*
Paraguay	85.1	[illegible]	2.2	10.8	0.7	2.5	18.4	23.2	15.8	2.4	9.9	..
Peru	75.6	84.7	0.4	12.9	0.1	3.2	12.9	22.2	6.5	8.1	19.5	16.5
Philippines	69.0	..	–1.1	6.0	–0.3	1.5	42.2	62.3	14.1	15.0	13.4	18.5
Poland	..	86.6	..	16.3	..	3.6	6.4	18.1	..	6.0	..	42.2
Portugal	..	..	1.6	*2.7*	0.5	1.7	73.3	76.1	..	..	33.1	41.6
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	..	..	16.2	..	3.5	..	..	0.0	7.0	44.8	31.4
Russian Federation	..	76.6	..	6.4	..	1.4	..	8.7	..	1.5	..	*24.7*

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Statistics

Data are shown for economies as they were constituted in 1997, and historical data are revised to reflect current political arrangements. Exceptions are noted throughout the tables.

On 1 July 1997 China resumed its exercise of sovereignty over Hong Kong. Data for China do not include data for Hong Kong, China, or Taiwan, China, unless otherwise noted.

Data for the Democratic Republic of Congo (Congo, Dem. Rep. in the table listings) refer to the former Zaire. For clarity, this edition also uses the formal name of the Republic of Congo (Congo, Rep. in the table listings).

Data are shown whenever possible for the individual countries formed from the former Czechoslovakia—the Czech Republic and the Slovak Republic.

Data are shown for Eritrea whenever possible, but in most cases before 1992 Eritrea is included in the data for Ethiopia.

Data for Germany refer to the unified Germany unless otherwise noted.

Data for Jordan refer to the East Bank only unless otherwise noted.

In 1991 the Union of Soviet Socialist Republics was dissolved into 15 countries (Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan). Whenever possible, data are shown for the individual countries.

Data for the Republic of Yemen refer to that country from 1990 onward; data for previous years refer to aggregated data of the former People's Democratic Republic of Yemen and the former Yemen Arab Republic unless otherwise noted.

Whenever possible, data are shown for the individual countries formed from the former Yugoslavia—Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Slovenia, and the Federal Republic of Yugoslavia. All references to the Federal Republic of Yugoslavia in the tables are to the Federal Republic of Yugoslavia (Serbia/Montenegro) unless otherwise noted.

Additional information about the data is provided in *Primary data documentation*. That section summarizes national and international efforts to improve basic data collection and gives information on primary sources, census years, fiscal years, and other background. *Statistical methods* provides technical information on some of the general calculations and formulas used throughout the book.

Discrepancies in data presented in different editions of the *World Development Indicators* reflect updates by countries as well as revisions to historical series and changes in methodology. Thus readers are advised not to compare data series between editions of the *World Development Indicators* or between different World Bank publications. Consistent time-series data for 1960–97 are available on the *World Development Indicators* CD-ROM. Except where noted, growth rates are in real terms. (See *Statistical methods* for information on the methods used to calculate growth rates.) Data for some economic indicators for some economies are presented in fiscal years rather than calendar years; see *Primary data documentation*. All dollar figures are current U.S. dollars unless otherwise stated. The methods used for converting national currencies are described in *Statistical methods*.

Users guide

The World Bank's classification of economies

For operational and analytical purposes the World Bank's main criterion for classifying economies is gross national product (GNP) per capita. Every economy is classified as low income, middle income (subdivided into lower middle and upper middle), or high income. For income classifications see the map on the inside front cover and the list on the front cover flap. Note that classification by income does not necessarily reflect development status. Because GNP per capita changes over time, the country composition of income groups may change from one edition of the *World Development Indicators* to the next. Once the classification is fixed for an edition, all historical data presented are based on the same country grouping using the most recent year for which GNP per capita data are available (1997 in this edition). Low-income economies are those with a GNP per capita of $785 or less in 1997. Middle-income economies are those with a GNP per capita of more than $785 but less than $9,656. Lower-middle-income and upper-middle-income economies are separated at a GNP per capita of $3,125. High-income economies are those with a GNP per capita of $9,656 or more. The 11 participating member countries of the European Monetary Union (EMU) are presented as a subgroup under high-income economies.

Aggregate measures for income groups

The aggregate measures for income groups include 210 economies (economies presented in the main tables plus the economies listed in table 1.6) wherever data are available. To maintain consistency in the aggregate measures over time and between tables, missing data are imputed where possible. Most aggregates are totals (designated by a *t* if the aggregates include gap-filled estimates for missing data; otherwise totals are designated by an *s* for simple totals), median values *(m)*, or weighted averages *(w)*. Gap filling of amounts not allocated to countries may result in discrepancies between subgroup aggregates and overall totals. See *Statistical methods* for further discussion of aggregation methods.

Aggregate measures for regions

The aggregate measures for regions include only low- and middle-income economies (note that these measures include developing economies with populations of less than 1 million, including those listed in table 1.6). The country composition of regions is based on the World Bank's analytical regions and may differ from common geographic usage. For regional classifications see the map on the inside back cover and the list on the back cover flap. See *Statistical methods* for further discussion of aggregation methods.

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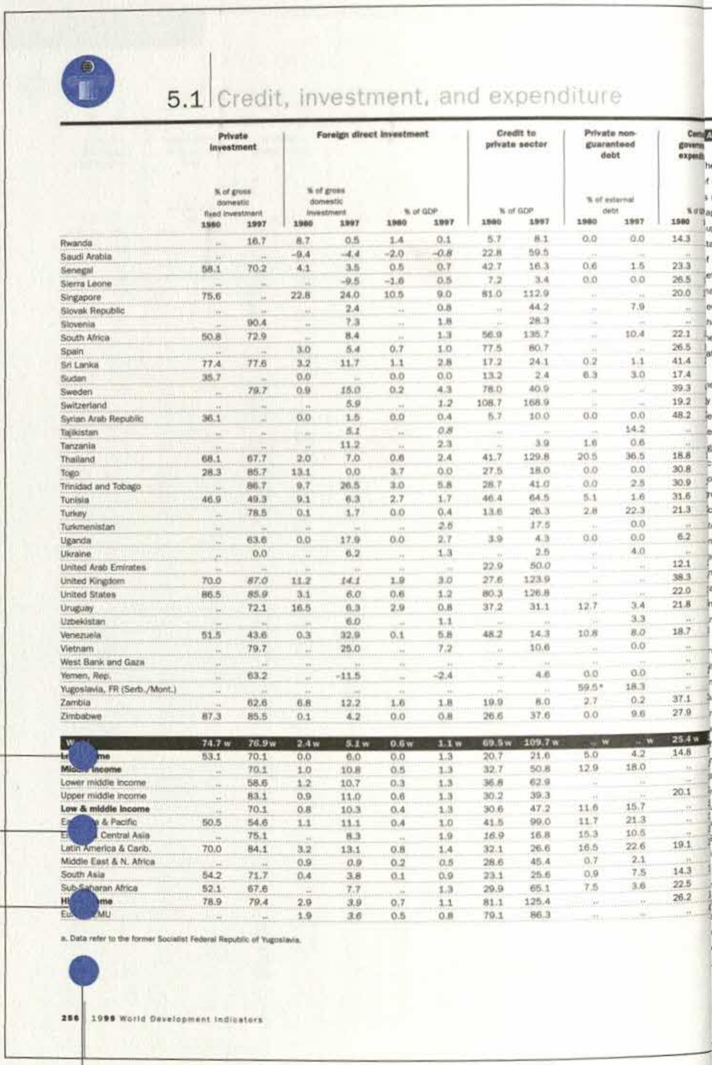

5.1 Credit, investment, and expenditure

	Private investment		Foreign direct investment				Credit to private sector		Private non-guaranteed debt		Cen govern expend
	% of gross domestic fixed investment		% of gross domestic investment		% of GDP		% of GDP		% of external debt		% of
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980
Rwanda	..	16.7	8.7	0.5	1.4	0.1	5.7	8.1	0.0	0.0	14.3
Saudi Arabia	..	..	-9.4	-4.4	-2.0	*-0.8*	22.8	59.5	..	..	..
Senegal	58.1	70.2	4.1	3.5	0.5	0.7	42.7	16.3	0.6	1.5	23.3
Sierra Leone	..	..	..	-9.5	-1.6	0.5	7.2	3.4	0.0	0.0	26.5
Singapore	75.6	..	22.8	24.0	10.5	9.0	81.0	112.9	..	..	20.0
Slovak Republic	..	..	..	2.4	..	0.8	..	44.2	..	7.9	..
Slovenia	..	90.4	..	7.3	..	1.8	..	28.3	..	..	..
South Africa	50.8	72.9	..	8.4	..	1.3	56.9	135.7	..	10.4	22.1
Spain	..	..	3.0	5.4	0.7	1.0	77.5	80.7	..	..	26.5
Sri Lanka	77.4	77.6	3.2	11.7	1.1	2.8	17.2	24.1	0.2	1.1	41.4
Sudan	35.7	..	0.0	..	0.0	0.0	13.2	2.4	6.3	3.0	17.4
Sweden	..	*79.7*	0.9	*15.0*	0.2	4.3	78.0	40.9	..	..	39.3
Switzerland	..	..	..	*5.9*	..	*1.2*	108.7	168.9	..	..	19.2
Syrian Arab Republic	36.1	..	0.0	1.5	0.0	0.4	5.7	10.0	0.0	0.0	48.2
Tajikistan	..	..	..	*5.1*	..	*0.8*	..	..	..	14.2	..
Tanzania	..	..	..	11.2	..	2.3	..	3.9	1.6	0.6	..
Thailand	68.1	67.7	2.0	7.0	0.6	2.4	41.7	129.8	20.5	36.5	18.8
Togo	28.3	85.7	13.1	0.0	3.7	0.0	27.5	18.0	0.0	0.0	30.8
Trinidad and Tobago	..	86.7	9.7	26.5	3.0	5.8	28.7	*41.0*	0.0	2.5	30.9
Tunisia	46.9	49.3	9.1	6.3	2.7	1.7	46.4	64.5	5.1	1.6	31.6
Turkey	..	78.5	0.1	1.7	0.0	0.4	13.6	26.3	2.8	22.3	21.3
Turkmenistan	..	..	..	..	..	*2.6*	..	*17.5*	..	0.0	..
Uganda	..	63.6	0.0	17.9	0.0	2.7	3.9	4.3	0.0	0.0	6.2
Ukraine	..	0.0	..	6.2	..	1.3	..	2.5	..	4.0	..
United Arab Emirates	..	..	..	..	..	..	22.9	*50.0*	..	..	12.1
United Kingdom	70.0	*87.0*	11.2	*14.1*	1.9	*3.0*	27.6	123.9	..	..	38.3
United States	86.5	*85.9*	3.1	*6.0*	0.6	1.2	80.3	126.8	..	..	22.0
Uruguay	..	72.1	16.5	6.3	2.9	0.8	37.2	31.1	12.7	3.4	21.8
Uzbekistan	..	..	..	6.0	..	1.1	..	..	..	3.3	..
Venezuela	51.5	43.6	0.3	32.9	0.1	5.8	48.2	14.3	10.8	*8.0*	18.7
Vietnam	..	79.7	..	25.0	..	7.2	..	10.6	..	0.0	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	63.2	..	-11.5	..	-2.4	..	4.6	0.0	0.0	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	59.5[a]	18.3	..
Zambia	..	62.6	6.8	12.2	1.6	1.8	19.9	8.0	2.7	0.2	37.1
Zimbabwe	87.3	85.5	0.1	4.2	0.0	0.8	26.6	37.6	0.0	9.6	27.9
W	74.7 w	76.9 w	2.4 w	5.1 w	0.6 w	1.1 w	69.5 w	109.7 w	.. w	.. w	25.4 w
L me	53.1	70.1	0.0	6.0	0.0	1.3	20.7	21.6	5.0	4.2	14.8
Mi income	..	70.1	1.0	10.8	0.5	1.3	32.7	50.8	12.9	18.0	..
Lower middle income	..	58.6	1.2	10.7	0.3	1.3	36.8	62.9	..	..	..
Upper middle income	..	83.1	0.9	11.0	0.6	1.3	30.2	39.3	..	..	20.1
Low & middle income	..	70.1	0.8	10.3	0.4	1.3	30.6	47.2	11.6	15.7	..
Ea & Pacific	50.5	54.6	1.1	11.1	0.4	1.0	41.5	99.0	11.7	21.3	..
E Central Asia	..	75.1	..	8.3	..	1.9	*16.9*	16.8	15.3	10.5	..
Latin America & Carib.	70.0	84.1	3.2	13.1	0.8	1.4	32.1	26.6	16.5	22.6	19.1
Middle East & N. Africa	..	..	0.9	*0.9*	0.2	*0.5*	28.6	45.4	0.7	2.1	..
South Asia	54.2	71.7	0.4	3.8	0.1	0.9	23.1	25.6	0.9	7.5	14.3
Sub-Saharan Africa	52.1	67.6	..	7.7	..	1.3	29.9	65.1	7.5	3.6	22.5
Hi me	78.9	79.4	2.9	*3.9*	0.7	1.1	81.1	125.4	..	..	26.2
Eu MU	..	..	1.9	*3.6*	0.5	0.8	79.1	86.3	..	..	..

a. Data refer to the former Socialist Federal Republic of Yugoslavia.

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Footnotes

Known deviations from standard definitions or breaks in comparability over time or across countries are either footnoted in the tables or noted in *About the data*. When available data are deemed to be too weak to provide reliable measures of levels and trends or do not adequately adhere to international standards, the data are not shown.

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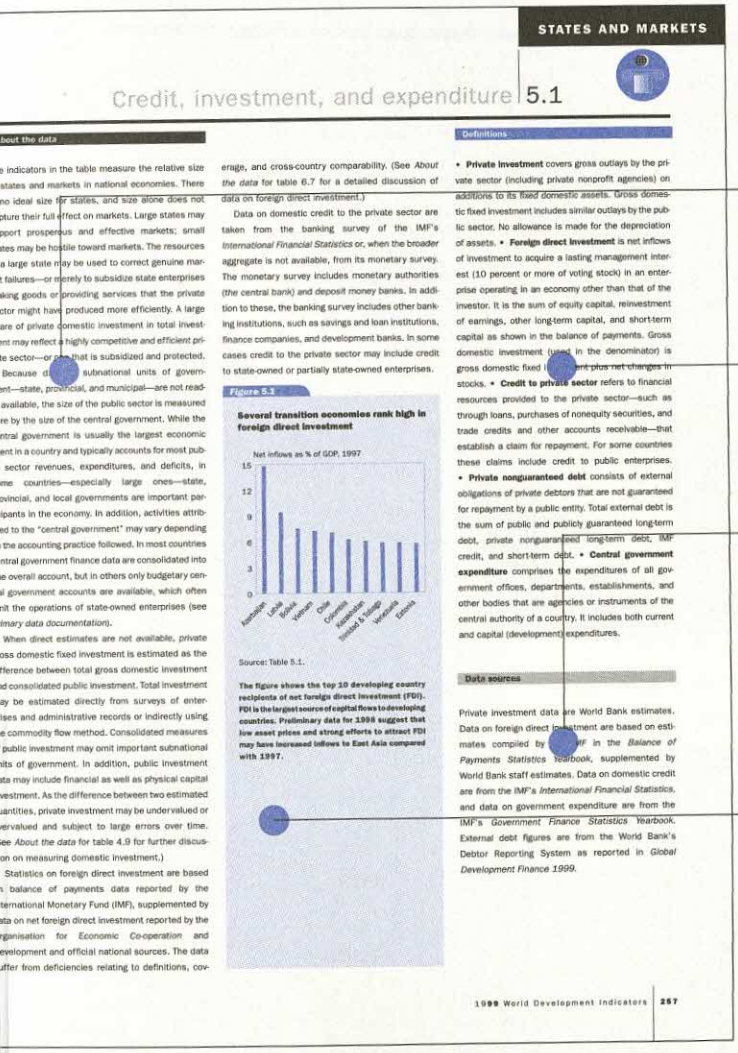

STATES AND MARKETS

Credit, investment, and expenditure 5.1

bout the data

e indicators in the table measure the relative size
states and markets in national economies. There
no ideal size for states, and size alone does not
pture their full effect on markets. Large states may
pport prosperous and effective markets; small
ates may be hostile toward markets. The resources
a large state may be used to correct genuine mar-
t failures—or merely to subsidize state enterprises
aking goods or providing services that the private
ctor might have produced more efficiently. A large
are of private domestic investment in total invest-
ent may reflect a highly competitive and efficient pri-
te sector—or one that is subsidized and protected.

Because d[illegible] subnational units of govern-
ent—state, provincial, and municipal—are not read-
available, the size of the public sector is measured
re by the size of the central government. While the
ntral government is usually the largest economic
ent in a country and typically accounts for most pub-
sector revenues, expenditures, and deficits, in
me countries—especially large ones—state,
ovincial, and local governments are important par-
ipants in the economy. In addition, activities attrib-
ed to the "central government" may vary depending
the accounting practice followed. In most countries
ntral government finance data are consolidated into
e overall account, but in others only budgetary cen-
al government accounts are available, which often
nit the operations of state-owned enterprises (see
imary data documentation).

When direct estimates are not available, private
oss domestic fixed investment is estimated as the
fference between total gross domestic investment
d consolidated public investment. Total investment
ay be estimated directly from surveys of enter-
ises and administrative records or indirectly using
e commodity flow method. Consolidated measures
public investment may omit important subnational
its of government. In addition, public investment
ta may include financial as well as physical capital
vestment. As the difference between two estimated
uantities, private investment may be undervalued or
ervalued and subject to large errors over time.
ee *About the data* for table 4.9 for further discus-
on on measuring domestic investment.)

Statistics on foreign direct investment are based
balance of payments data reported by the
ternational Monetary Fund (IMF), supplemented by
ata on net foreign direct investment reported by the
rganisation for Economic Co-operation and
evelopment and official national sources. The data
uffer from deficiencies relating to definitions, coverage, and cross-country comparability. (See *About the data* for table 6.7 for a detailed discussion of data on foreign direct investment.)

Data on domestic credit to the private sector are taken from the banking survey of the IMF's *International Financial Statistics* or, when the broader aggregate is not available, from its monetary survey. The monetary survey includes monetary authorities (*the central bank*) and deposit money banks. In addition to these, the banking survey includes other banking institutions, such as savings and loan institutions, finance companies, and development banks. In some cases credit to the private sector may include credit to state-owned or partially state-owned enterprises.

Figure 5.1

Several transition economies rank high in foreign direct investment

Source: Table 5.1.

The figure shows the top 10 developing country recipients of net foreign direct investment (FDI). FDI is the largest source of capital flows to developing countries. Preliminary data for 1998 suggest that low asset prices and strong efforts to attract FDI may have increased inflows to East Asia compared with 1997.

Definitions

- **Private investment** covers gross outlays by the private sector (including private nonprofit agencies) on additions to its fixed domestic assets. Gross domestic fixed investment includes similar outlays by the public sector. No allowance is made for the depreciation of assets. • **Foreign direct investment** is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. Gross domestic investment (used in the denominator) is gross domestic fixed i[illegible]ent plus net changes in stocks. • **Credit to private sector** refers to financial resources provided to the private sector—such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable—that establish a claim for repayment. For some countries these claims include credit to public enterprises.
- **Private nonguaranteed debt** consists of external obligations of private debtors that are not guaranteed for repayment by a public entity. Total external debt is the sum of public and publicly guaranteed long-term debt, private nonguaranteed long-term debt, IMF credit, and short-term debt. • **Central government expenditure** comprises the expenditures of all government offices, departments, establishments, and other bodies that are agencies or instruments of the central authority of a country. It includes both current and capital (development) expenditures.

Data sources

Private investment data are World Bank estimates. Data on foreign direct investment are based on estimates compiled by [illegible]MF in the *Balance of Payments Statistics Yearbook*, supplemented by World Bank staff estimates. Data on domestic credit are from the IMF's *International Financial Statistics*, and data on government expenditure are from the IMF's *Government Finance Statistics Yearbook*. External debt figures are from the World Bank's Debtor Reporting System as reported in *Global Development Finance 1999*.

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Notes about data

About the data provides a general discussion of international data standards, data collection methods, and sources of potential errors and inconsistencies. Readers are urged to read these notes to gain an understanding of the reliability and limitations of the data presented. For a full discussion of data collection methods and definitions readers should consult the technical documentation provided by the original compilers cited in *Data sources*.

Definitions

Definitions provide short descriptions of the main indicators in each table.

Sources

Partners are identified in the *Data sources* section following each table, and key publications of the partners drawn on for the table are identified. For a description of our partners and information on their data publications see the *Partners* section.

Figures

When appropriate, tables are accompanied by figures highlighting particular trends or issues.

Symbols

.	means that data are not available or that aggregates cannot be calculated because of missing data in the years shown.
0 or **0.0**	means zero or less than half the unit shown.
/	in dates, as in 1990/91, means that the period of time, usually 12 months, straddles two calendar years and refers to a crop year, a survey year, or a fiscal year.
$	means current U.S. dollars unless otherwise noted.
>	means more than.
<	means less than.

Data presentation conventions

- A blank means not applicable or that an aggregate is not analytically meaningful.
- A billion is 1,000 million.
- A trillion is 1,000 billion.
- Figures in italics indicate data that are for years or periods other than those specified.
- Data for years that are more than three years from the range shown are footnoted.

The cutoff date for data is 1 February 1999.

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WORLD VIEW

Managing a crisis to protect the poor

In 1998 the economic engines that powered the East Asian miracle ran out of steam, setting off a chain reaction across the globe. Millions had their incomes plummet. Some lost their jobs, while others worried about losing theirs. Ethnic conflict and food riots broke out in Indonesia, and students took to the streets, toppling a president who had been in power for 32 years. Farmers protested in Thailand, and workers marched in the Republic of Korea.

Beyond these expressions of pain and dissent was a quieter crisis. Children were being pulled from school and put to work. Food was being carefully rationed in households. Middle-class families were cutting back sharply on consumption.

This human crisis has been a rude awakening. Developing country growth (excluding the transition economies) had averaged 5.3 percent a year in 1991–97, two percentage points higher than in the 1980s. This strong performance raised expectations that the international development goals set during this decade for 2015 might just be attained. But those expectations must now be tempered—by the sudden slowdown of growth in 1998, to be followed almost certainly by more disappointment in 1999.

Growth falters in 1998

World growth fell sharply in 1998—to 1.9 percent from 3.2 percent in 1997 and an average of 2.3 percent in 1991–97.[1] Developing country growth fell by half—to 1.9 percent from 4.8 percent in 1997 and an average of 3.1 percent in 1991–97 (table 1a). The developing East Asia and Pacific region (excluding China) saw its average per capita income fall for the first time since 1970.

These output contractions turned out far worse than was expected a year ago when the East Asian crisis was gathering momentum. Japan slid from stagnation into a full-blown recession. The recession in the five East Asian crisis countries was deep and severe. And the consequences of El Niño and other natural disasters—particularly severe for low-income countries in Central America and for Bangladesh, Thailand, and Indonesia—were worse than anticipated. Japan's poor performance contributed 0.5 percentage point to the decline in world GDP, while East Asia's five crisis countries contributed another 0.4 percentage point. Output fell by 13 percent in Indonesia, 8 percent in Thailand, 7 percent in Korea, and 6.7 percent in Malaysia.

Table 1a

Real GDP growth, 1991–2001

Average annual % change

			1997 forecast	Current estimate	Current forecasts		
	1991–97	1997	1998	1998	1999	2000	2001
World	2.3	3.2	2.6	1.9	1.8	2.4	2.8
High income	2.1	2.8	2.4	1.9	1.8	2.1	2.3
Low and middle income[a]	3.1	4.8	4.0	1.9	1.5	3.7	4.6
Excluding CEE and FSU	5.1	..	4.2	2.4	2.1	3.9	4.8
East Asia and the Pacific	10.7[b]	6.6	5.7	1.8	4.0	5.5	6.3
Excluding China	7.1[c]	4.0[c]	0.7[c]	–8.4	–0.9	2.9	4.3
East Asia-5[d]	7.2	4.5	..	–7.7	0.3	3.5	4.5
Europe and Central Asia	–4.4	3.0	3.0	–0.3	–1.5	2.3	3.6
Latin America and the Caribbean	3.4	5.2	2.7	2.0	–0.8	2.5	3.9
Middle East and North Africa	2.9	3.1	2.7	1.5	0.7	2.5	3.3
South Asia	5.7	4.6	5.8	5.2	4.4	4.8	5.2
Sub-Saharan Africa	2.2	3.1	3.4	2.1	2.5	4.0	4.0

a. Including the countries of Central and Eastern Europe (CEE) and the former Soviet Union (FSU).

b. Excluding the Republic of Korea.

c. Including the Republic of Korea.

d. Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand.

Source: World Bank 1999a and World Bank staff estimates.

The East Asian crisis hit every corner of the developing world. Commodity markets were already in a cyclical decline after the miniboom of 1994–96, and the East Asian crisis pushed world demand down further. East Asia had been responsible for much of the recent growth in global consumption—and with Japan it accounted for a third of consumption. Its collapse in demand—along with the lagged supply response to the 1994–96 miniboom—pulled commodity prices down. Hit hard were the Middle East, North Africa, and the former Soviet Union, reflecting the sharp fall in crude oil prices. Also hit hard was Sub-Saharan Africa, which depends on primary commodities for 80 percent of its export earnings (see table 4.5).

But the most visible dimension of the crisis was the turbulence in financial markets—capital outflows, falling currencies, failing banks, and investors' loss of confidence in East Asia, Latin America, and Russia. Net long-term private capital flows to developing countries (including Korea) fell sharply from $299 billion in 1997 to $227 billion in 1998. Although flows of foreign direct investment appear to have held up, the collapse in confidence in emerging markets is evident in the sharp decline in debt and portfolio equity flows—from $136 billion in 1997 to $72 billion in 1998—and in the large increases in secondary market spreads for developing country debt. This was only partially offset by an increase in net official flows from $39 billion to $48 billion.

East Asia's poor bear the cost

The one region that had shown the way in rapid poverty reduction now faces a sharp reversal. Between 1975 and 1995 poverty in East Asia fell by two-thirds (based on a headcount index using a $1 a day poverty line in 1985 purchasing power parity, or PPP, terms).[2] In 1975 about 6 in 10 East Asians lived in poverty—in 1995, about 2 in 10, with progress led by China and Indonesia, home to 92 percent of East Asia's poor in 1975.

Social indicators—which track progress in life expectancy, health, and schooling—had also improved (table 1b). The average East Asian now lives to around 70. Only 37 East Asian infants of every 1,000 die before their first birthday, less than half the level in 1970. And access to education (measured by net primary school enrollment ratios) is close to universal in most countries.

But even before the crisis, cracks were evident in East Asia's success in fighting poverty. Low initial income inequality is often cited as a reason for East Asia's rapid growth, but there is evidence that it has been rising in recent years. Rising returns to education have widened the wage differences between skilled and unskilled workers. And concentrations of modern sector activities have left some areas behind—among them, the interior provinces of China, northeastern Thailand, and the outlying islands of the Indonesian archipelago.

Such rising inequality reduces growth's contribution to poverty reduction.[3] This effect shows up in distribution-corrected rates of growth for per capita consumption in East Asia, which are lower than the uncorrected growth rates (table 1.2). Rising inequality can also stir up social tensions, particularly where the gains are seen to be divided unequally across ethnic lines, as in Indonesia.

A second crack was the breakdown of traditional safety nets to deal with job losses, disabilities, and aging. While progress was eroding the traditional social safety nets of family and kinship, efforts to replace them with more formal safety nets affected only small parts of the population.

The cracks have widened with the crisis:

- Unemployment has risen as the economies have contracted, but greater underemployment and falling real wages are likely

Table 1b

Progress in social indicators

	Life expectancy at birth years		Infant mortality rate per 1,000 live births		Primary net enrollment ratio % of relevant age group	
	1970	1997	1970	1997	1980	1996
East Asia and the Pacific	59	69	79	37	..	100
Indonesia	48	65	118	47	88	97
Malaysia	62	72	45	11	..	100
Philippines	57	68	67	35	94	100
Thailand	58	69	73	33	..	..
Europe and Central Asia	..	69	..	23	..	92
Latin America and the Caribbean	61	70	84	32	..	91
Middle East and North Africa	53	67	134	49	..	87
South Asia	49	62	139	77	..	80[a]
Sub-Saharan Africa	44	51	137	91	..	57[b]
Developing countries	55	65	107	60	..	85[c]

a. Data are for 1995 and refer to 5 countries with 87 percent of the regional school-age population.

b. Data are for 1995 and refer to 29 countries with 52 percent of the regional school-age population.

c. Data are for 1995.

Source: UNESCO and World Bank staff estimates.

to be the main expression of the falling demand for labor in countries with large informal sectors and flexible labor markets.

- With large exchange rate depreciations, the consumer price index has risen sharply in all countries, as has the index for food prices. As stability returns, the rate of inflation will fall, but the short-term impact has been severe.
- With large price changes, relative prices have shifted enormously. For example, prices of basic medicines have risen sharply, and food prices have risen relative to other prices.
- Social unrest, particularly serious in Indonesia, is also a danger elsewhere—and with it go threats to political stability.

Early evidence from Indonesia suggests that the initial impacts on poverty and unemployment are more modest than had been feared. But the crisis is far from over, and the story could change as later effects kick in (box 1a).

Poverty and social indicators in times of crisis

Faltering growth clearly hurts the poor, but it hurts them more when the inequality of income distribution is increasing—and much less, if at all, when it is declining. What, for example, would be the effect of having national consumption or income fall by 10 percent over 1998–2000? With no change in income distribution, poverty would double in Indonesia. But if income distribution were to worsen—by, say, a 10-point rise in the Gini coefficient—the incidence of poverty would almost triple. For Indonesia the large projected decline in aggregate growth would force an additional 6 percent of the population into poverty by 2000, assuming income distribution does not worsen. Thailand would see an additional 8 percent in poverty.

The pernicious effects of inequality and faltering growth were also apparent in Latin America in the 1980s, where high and widening inequality increased the numbers in poverty. These effects have been apparent, too, in transition economies, where the continuing declines in output have been accompanied by a sharp worsening in income distribution and rising numbers in poverty—from 14 million in 1989 to 147 million today. In both regions social indicators held up—but their improvement slowed or stagnated.

Latin America's debt crisis in the 1980s

The 1980s debt crisis killed growth in Latin America—and with it jobs, wages, and investment.[4] Because income inequality was so high, the poor were hit especially hard. Brazil, Peru, Venezuela, and much of Central America reported increases in poverty in the 1980s. The highly unequal income distribution, believed to have worsened in many Latin American countries, contributed to these increases.[5] The transmission mechanisms were clear: inflation, the enemy of the poor, rose sharply, while employment and real wages declined.

The paradox in the Latin American story is the behavior of social indicators. Despite a significant decline in social spending, both health and education indicators improved in the 1980s. Why?

- There were lags between reductions in inputs and changes in outcomes: many outcome indicators were leveling off toward the end of the decade.
- Aggregate data hide serious disparities within countries. Middle-income groups were much more likely to protect their education and health standards. The poorer regions, such as North East Brazil, probably were affected much more severely.
- The efficiency of spending may have increased as resources for social spending declined. This was true, say, for pharmaceuticals, whose prices came down.
- Basic social indicators, when fairly high, tend to reach a plateau, and they need to be supplemented with more detailed

Box 1a

Measuring the impact of the crisis on Indonesia's poor

Before the crisis the poverty rate in Indonesia, based on a $1 a day poverty line (PPP at 1985 prices), was estimated at 8 percent—roughly 16 million poor people. Using the national poverty line, the government estimated poverty at 11 percent, about 22 million. During the crisis forecasts became increasingly alarmist. Escalating estimates, based on a variety of assumptions, rose from 35–50 million to 80–100 million.

The latest survey data provide a comprehensive picture of poverty during the crisis. Round 2+ of the Indonesian Family Life Survey, carried out by RAND Corporation in cooperation with Lembaga Demografi, tracked welfare changes between August–December 1997 and August–December 1998 for 2,000 households in seven provinces. The results:

- Average expenditures for all households declined by close to a quarter, a large decline by any standards. But median expenditures fell by less than 2 percent. This suggests that upper-income households have had the biggest declines in per capita spending.
- Average spending appears to have declined most in urban areas (by more than a third), while rural spending fell by 13 percent.
- Regions most integrated into the global economy (with firms with large dollar-denominated debt or high dependence on imports) suffered most, particularly Java. Regions affected by drought were also badly hit.
- The implied poverty rates range from 14 percent (using official inflation rates based on the consumer price index) to 20 percent (using the inflation rates implied by the data collected in the survey). Similar rates were found by a survey of 100 villages conducted by the Central Bureau of Statistics (under UNICEF sponsorship).

How good are these results? Given the massive changes in relative prices (particularly the large increase in food prices), calculations of poverty based on past poverty lines will be misleading, and it may be necessary to recalculate poverty lines to get better estimates.

Expenditures are often a good measure of long-term income (with savings and borrowings smoothing out expenditures). But expenditure data have problems. Short-term changes in expenditure may be misleading. Poor households may be reporting modest changes in expenditures but suffering long-term welfare losses because of a reduction in assets or cutbacks on important nonstaples (such as health or education) to pay for higher-priced staples. In middle-class households sharp expenditure reductions may overstate the impact of a crisis because they may simply reflect expectations of lower income—expectations that may not materialize.

Evidence from Indonesia supports this view. Surveys report that a large number of poor households are selling assets to survive and that some are even squeezing expenditures on health and education.

information, such as the proportion of children who progress from primary to secondary school.

- Despite the overwhelming importance of social spending, it bears a weak relationship to outcomes and attainment (Filmer and Pritchett 1998).

Hotly debated in Latin America is whether the macroeconomic reforms increased poverty and inequality. Much depends on the counterfactual (Lustig 1995). If fiscal deficits had been larger, the longer-run impact on growth would have been even more severe, with a much larger impact on the poor. Indeed, the reforms helped the region to come out of the crisis during the 1990s and to achieve average growth nearly double that of the 1980s. But policymakers could have avoided unnecessary cuts in social spending or been more judicious when faced with tradeoffs between large subsidies to rescue sick financial institutions and employment benefits to help cushion the impact of the crisis on the poor.

The crisis in Europe and Central Asia—more than 100 million new poor

In 1989 about 14 million people in the transition economies were living under a poverty line of $4 a day (1990 purchasing power parities and exchange rates).[6] By mid-1990 that number was about 147 million, one person in three. The distribution of income in the communist period was relatively egalitarian, primarily because of a relatively flat wage distribution, but also because of the virtual absence of income from property and the redistribution of income through social transfers. Low Gini coefficients, ranging from 23 to 26, were fairly common. Today, some eight years later, income distribution has worsened sharply, particularly in the former Soviet Union.

As in Latin America, the social indicators have held up, but the stress is showing in the declining or stagnating life expectancy and sharply worsening adult mortality. Today, for example, the probability that a 15-year-old Ukrainian male will survive until his sixtieth birthday is a mere 65 percent, down from 72 percent in 1980. The Europe and Central Asia region is the only part of the developing world with rising adult mortality rates. Even Sub-Saharan Africa, with its AIDS epidemic, is seeing a reduction in adult mortality (see table 2.18).

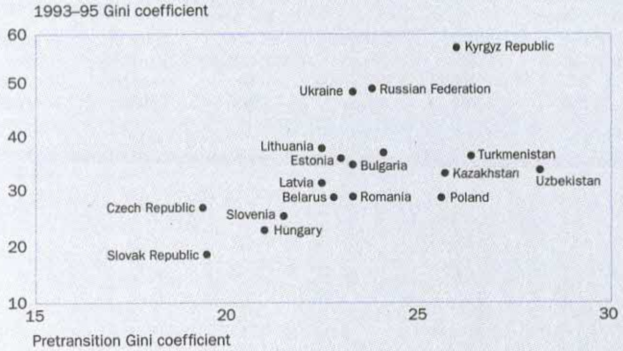
Driving these trends in the transition economies is a decline in economic output. Before the collapse of the Soviet Union growth rates averaged about 2–3 percent. But by 1990 all countries were in a decline that continued through 1992. After that the Eastern European economies began to grow, with recovery slower in many countries of the former Soviet Union. The exceptions, with eight years of continuous decline in output: Russia and Ukraine, which together have some 200 million people. And consider this: in Russia every percentage-point decline in GDP throws 700,000 people into poverty.

A second big factor is the worsening income distribution. The pattern that seems to have emerged in the transition economies is a quick, large decline in output at first, with little worsening in income distribution, followed by a slower decline, or even an increase, in output but a much sharper worsening in income distribution. During the transition the average Gini coefficient has risen from 24 to 33, at 1.5 points a year, much faster than the fairly rapid deterioration in the United Kingdom and the United States in the 1930s. Russia's and Ukraine's Gini coefficients doubled—to about 48. Only the Central European states avoided this increase (figure 1a).

The numbers in poverty are large, but the estimates are highly sensitive to the poverty line used and the quality of data on the population's income or expenditures. When household survey data are corrected for possible understatements of income by using macroeconomic data for household income, the poverty estimates for the region fall from 168 million to 147 million (table 1c). Poverty in the former Soviet Union—which accounts for the bulk of the poor (about 100 million live in Russia and Ukraine)—is also fairly shallow. For all transition economies the poverty gap—how far below the poverty line the average income of the poor falls—is estimated at 2.8 percent of GDP. Thus poverty could be significantly reduced if social safety nets worked. But because of leaks from the safety net system, the real cost of removing poverty could be three times the estimated poverty gap.

Figure 1a

Gini coefficients in transition economies



Source: Milanovic 1998, appendix 4.

While the numbers in poverty are staggering, these trends could be reversed with growth rates of 4–5 percent and no further increases in inequality. But the experience in Poland and elsewhere suggests that where growth has resumed, it has merely kept poverty from increasing. Widening inequality has blocked progress in reducing poverty.

Unlike the poor in Latin America, those in the transition economies do not belong to an underclass. But if present trends persist, they may become an underclass less able to respond to opportunities that come with resumed growth. Understanding what is driving inequality and reversing the sharp deterioration could be as high a priority as restoring economic growth.

For the future

The calm that descended on financial markets toward the end of 1998 reflected confidence in the industrial countries' willingness to address some of the underlying issues that have led to the turbulence. But the prospects for a quick recovery in developing country growth are limited—for three reasons. The dependence on primary commodity exports is high in many countries. The large current account deficits in many countries are being financed by costly private capital inflows. And many economies continue to depend on markets in East Asia and Japan.

Preliminary World Bank forecasts suggest a continuing decline in developing country growth in 1999—to 1.5 percent a year in the base case. This reflects the sluggish recovery expected in East Asia, with growth running at about half the rates in the early 1990s. China, South Asia, and Eastern Europe will remain relatively unaffected by the crisis. Not so the former Soviet Union, the Middle East and North Africa, and Latin America and the Caribbean.

If the base case holds, growth is expected to return to the 1991–97 rates after 2000 in most developing regions. The exceptions: the four worst-affected East Asian countries. For them recovery will be more protracted because of the vulnerable balance sheets of their firms and banks.

And things could turn sour again. The outlook for the Japanese economy is still shaky. Uncertainties continue to loom in the large economies of Latin America, particularly Brazil. And there is always the possibility that a downturn in equity markets in the United States and Europe would push the industrial world into recession.

While it is too early to pronounce on the precise impact of the global financial crisis on the attainability of the international development goals, the review here suggests that:

- The consequences for poverty are severe.

Table 1c

Estimated poverty in transition economies, 1987–88 and 1993–95

	Poverty headcount index (%)			Total number of poor (millions)		
	1987–88	1993–95	Corrected data 1993–95	1987–88	1993–95	Corrected data 1993–95
Poland	6	20	14	2.1	7.6	5.3
Romania	6	59	39	1.3	13.5	8.9
Czech Republic	0	<1	<1	0.0	0.1	0.0
Hungary	1	4	2	0.1	0.4	0.2
Baltics	1	29	29	0.1	2.3	2.3
Moldova	4	66	66	0.2	2.9	2.9
Russian Federation	2	50	44	2.2	74.2	66.1
Ukraine	2	63	63	1.0	32.7	32.7
Central Asia	15	66	53	6.5	30.7	25.0
All transition economies	4	45	40	13.6[a]	168.0[a]	147.1[a]

Note: Poverty was estimated using two sets of data on income: data from household surveys, and the same data corrected for possible understatements of income by using macroeconomic data on household income. Poverty rates are based on poverty lines of $4 a day, estimated at 1990 purchasing power parities and exchange rates.

a. Total includes other transition enconomies.

Source: Milanovic 1998, tables 5.1 and 5.2.

Table 1d Performance gaps and distance to goals

	GNP per capita[a]	Under-five mortality rate			Net primary school enrollment ratio			Gross female primary school enrollment ratio		
	$ 1997	predicted on the basis of GNP per capita per 1,000 1997	ratio of actual to predicted 1997	distance from 1997 value to goal[b]	predicted on the basis of GNP per capita % 1996	ratio of actual to predicted 1996	distance from 1996 value to goal	predicted on the basis of GNP per capita % 1996	ratio of actual to predicted 1996	distance from 1996 value to goal
Congo, Dem. Rep.	110	179	0.83	99	44	1.22	46	41	0.99	9
Ethiopia	110	179	0.98	117	44	0.64	72	41	0.88	14
Burundi	140	174	1.15	133	..	..	..	41	1.09	5
Mozambique	140	174	1.15	134	46	0.87	60	41	1.01	8
Niger	200	..	..	..	50	0.49	76	42	0.90	12
Malawi	210	162	1.38	149	50	1.36	32	42	1.11	3
Tanzania	210[c]	162	0.84	91	50	0.95	52	42	1.17	1
Nepal	220	160	0.73	78	..	..	..	..	..	..
Chad	230	158	1.15	121	52	0.89	54	43	0.80	16
Eritrea	230	158	0.60	64	52	0.59	70	43	1.06	5
Guinea-Bissau	230	158	1.39	147	..	..	..	..	..	..
Burkina Faso	250	155	1.09	113	53	0.58	69	43	0.91	11
Madagascar	250	155	1.02	105	53	1.15	39	43	1.14	1
Angola	260	153	1.37	139	..	..	..	..	..	..
Mali	260	153	1.54	157	53	0.52	72	43	0.92	10
Yemen, Rep.	270	151	0.91	91	..	..	..	43	0.64	22
Nigeria	280	149	0.82	81	..	..	..	43	1.02	6
Sudan	290	148	0.78	77	..	..	..	43	1.04	5
Cambodia	300	146	1.01	98	56	1.74	2	43	1.03	5
Tajikistan	330	141	0.26	24	..	..	..	44	1.11	1
Uganda	330	141	1.15	108	..	..	..	44	1.04	4
Gambia, The	340	..	..	..	59	1.10	35	44	0.99	6
Kenya	340	139	0.81	75	..	..	..	44	1.13	1
Togo	340	139	0.99	92	59	1.45	15	44	0.93	9
India	370	134	0.66	58	..	..	..	44	0.97	7
Zambia	370	134	1.41	126	61	1.24	25	44	1.08	2
Benin	380	132	1.13	99	61	1.04	37	44	0.82	14
Mongolia	390	130	0.53	46	62	1.32	19	45	1.14	–1
Lao PDR	400	..	..	..	62	1.16	28	45	0.97	7
Nicaragua	410	127	0.45	38	63	1.23	22	45	1.12	0
Mauritania	440	121	1.23	99	65	0.88	43	45	1.04	3
Moldova	460	118	0.20	12	..	..	..	45	1.07	1
Kyrgyz Republic	480	..	..	..	68	1.40	5	46	1.07	1
Azerbaijan	510	109	0.21	11	..	..	..	46	1.04	2
Senegal	540	104	1.06	73	71	0.81	42	46	0.96	5
Guinea	550	102	1.79	122	72	0.51	64	47	0.74	16
Armenia	560	..	..	..	..	..	..	47	1.08	–1
Congo, Rep.	670	81	1.80	97	..	..	..	48	1.00	2
Lesotho	680	79	1.73	91	81	0.87	30	48	1.09	–2
Côte d'Ivoire	710	74	1.90	93	82	0.67	45	49	0.88	7
Zimbabwe	720	72	1.49	72	..	..	..	49	1.01	1
Honduras	740	69	0.70	32	84	1.07	10	49	1.01	0
Albania	760	65	0.62	28	86	1.19	–2	49	0.98	2

a. Calculated using the Atlas method (See *Statistical methods*). b. The goal for under-five mortality was determined to be the lesser of one-third of the 1997 level or 45. For countries where under-five mortality was less than 45 in 1997, the goal was assumed to be 12. c. Refers to mainland Tanzania only.

Table 1e

Regional average growth rates in real consumption needed to halve poverty in 25 years

%

	Poverty lines	
	$1 a day	**$2 a day**
East Asia and the Pacific	..	1.9
Europe and Central Asia	..	1.2
Latin America and the Caribbean	..	2.7
Middle East and North Africa	..	1.2
South Asia	1.3	..
Sub-Saharan Africa	2.1	..

Note: The estimates are population weighted and are based on the most recent purchasing power parity (PPP) estimates from the latest version of the Penn World Tables (PWT 5.6) in 1985 prices.

Source: World Bank staff estimates.

- Inequality may worsen, exacerbating poverty, if governments fail to restore macroeconomic stability or if the policies adopted to do so hurt the poor.
- Social indicators, which respond slowly to shocks, may be thrown off their trend line (though with a lag), reflecting their correlation with income. While social indicators generally improve with growth in income, many are performing well below potential (table 1d).

All developing regions have lost momentum in achieving their poverty goals. In 1991–97 only the two Asian regions were growing fast enough to reduce poverty by half by 2015 (table 1e). Current forecasts for 1998–2001 suggest that only South Asia and China will grow fast enough to halve poverty by 2015. The most dramatic loss in time has been for East Asian countries. Comparing current growth forecasts with those of a year ago, the average number of years it will take to reduce poverty by half has risen by about two years for Indonesia. In the Philippines, where income growth has historically been low, the further slowdown will increase the time it takes to halve poverty by as much as 10 years.

All this assumes that inequality remains constant. But crises usually mean rising inequality, unless governments adopt policies to protect the poor and adjust promptly. So, if governments are serious about reducing poverty, they need to worry about not only restoring economies but doing so in a way that does not worsen inequality. Crises—and the policy responses designed to deal with them—have vastly different impacts on different sections of society, impacts often differentiated by gender, race, and socioeconomic group.[7]

The impact of a macroeconomic crisis is transmitted through the sources of household income—wages, salaries, profits from business, returns on assets, and government transfers—and through inflation and changes in the relative prices households face:

- *Labor demand shocks.* The reduced demand for labor may mean increased unemployment (East Asia) or falling real wages (former Soviet Union). And it may affect skilled and unskilled workers differently—with skilled workers more likely to enjoy greater job security, and unskilled workers more likely to move into the informal sector and see their wages fall.
- *Cuts in public transfers and services.* Cuts in social spending are likely to affect the poor much more than others, as in the Latin American debt crisis. In Chile, where per capita social spending fell 20 percent between 1981 and 1986, the poorest 40 percent of families were hit hardest—because these families received some 50 percent of public health and education spending and 20 percent of social security payments (Bourguignon and Morrison 1992).
- *Inflation.* Rising prices, by sharply worsening inequality, hurt the poor the most. Changes in relative prices also hurt the poor when prices of essential commodities such as food or energy rise.

How households are affected depends on how they choose to respond to crises. They may cut back on consumption, increase their output, change jobs, pull children out of school and send them to work, tap savings, or sell assets.

Some of these actions may have long-term consequences by eroding human capital and jeopardizing future ability to earn. Mothers who are malnourished are more likely to give birth to underweight babies, who in turn may suffer from poor health or learning difficulties. Children deprived of schooling may have difficulties moving up the skills ladder. Longer-term consequences of crises may thus perpetuate poverty and inequalities in society. Evidence from East Asia suggests that parents are indeed responding in such ways, hurting their ability to participate in the recovery.

Governments therefore need to adopt policies that mitigate the consequences of such crises and address some of the adverse effects of household responses. This may require:

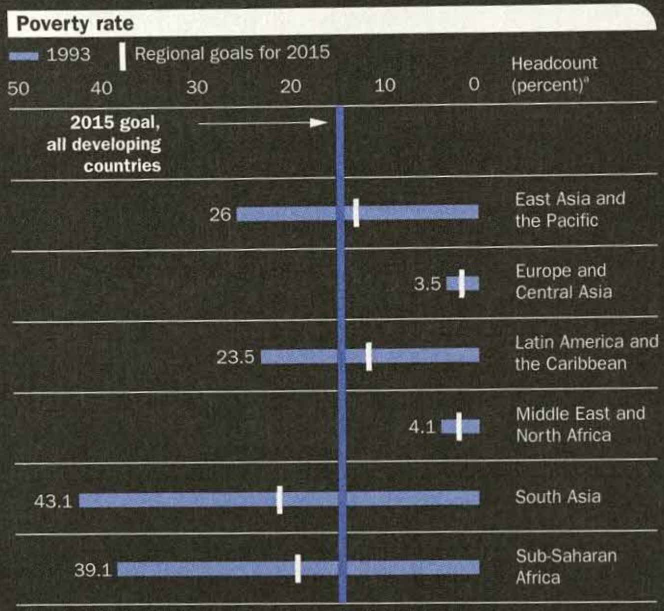
- Adopting stabilization policies that have the least cost to the poor and the vulnerable in the short and long term.
- Pursuing structural adjustment policies that enhance long-term opportunities for the poor.
- Protecting social expenditures that are critical to the poor.

While there remain large uncertainties relating to the depth and future course of the current financial crisis, our understanding of how to protect the poor continues to improve. And governments and policymakers can no longer be excused if their policy responses are insensitive to the needs of the poor. Today's challenge for the international community is to devote all energies to reversing the impact of the crisis and to generating fresh momentum for policies and programs that enhance the prospects for attaining the international development goals.

Notes

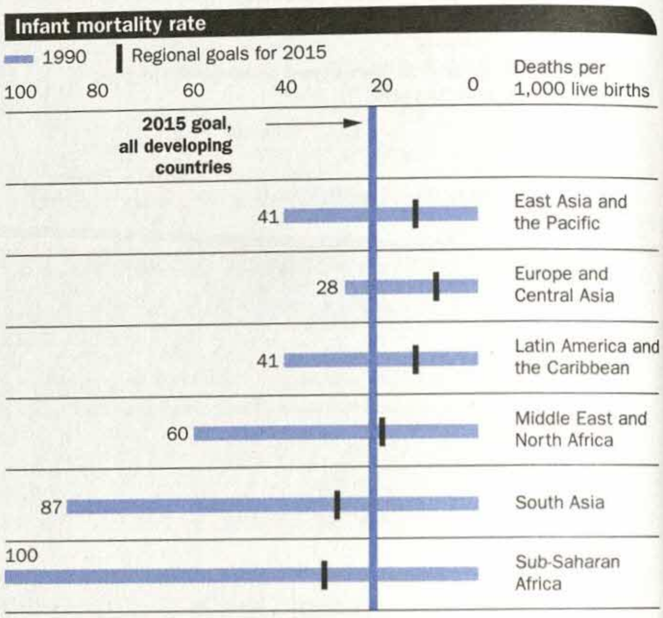
1. For more on developing country growth prospects see World Bank 1999a, on which the following discussion is based.
2. The following discussion draws heavily on World Bank 1998b. See also Ahuja and others 1997.
3. Ravallion (1997) has found from empirical tests for 23 developing countries that the rate of poverty reduction is directly proportional to a rate of growth of private consumption that has been corrected for distribution: $(1 - G)r$, where G is the Gini index and r is the rate of growth of private consumption.
4. The following discussion draws on Edwards 1995 and Lustig 1995.
5. The evidence is sparse. Only 12 countries boast more than one observation point in the decade, and for these countries the starting period is typically the mid-1980s. So generalizations about the decade as a whole need to be treated with caution.
6. The following discussion draws heavily on Milanovic 1998.
7. For a fuller discussion see World Bank forthcoming.

GOAL: to reduce poverty by half by 2015



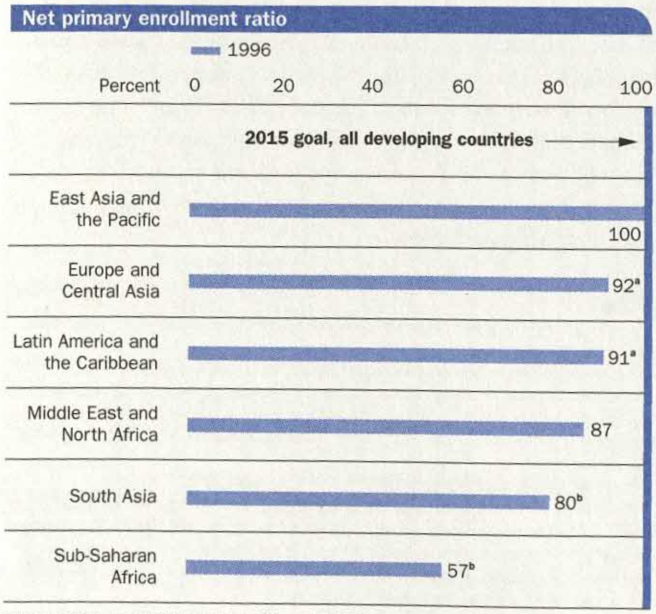
Source: World Bank staff estimates. a. People living on less than PPP$1 a day.

GOAL: to reduce infant mortality rates by two-thirds by 2015



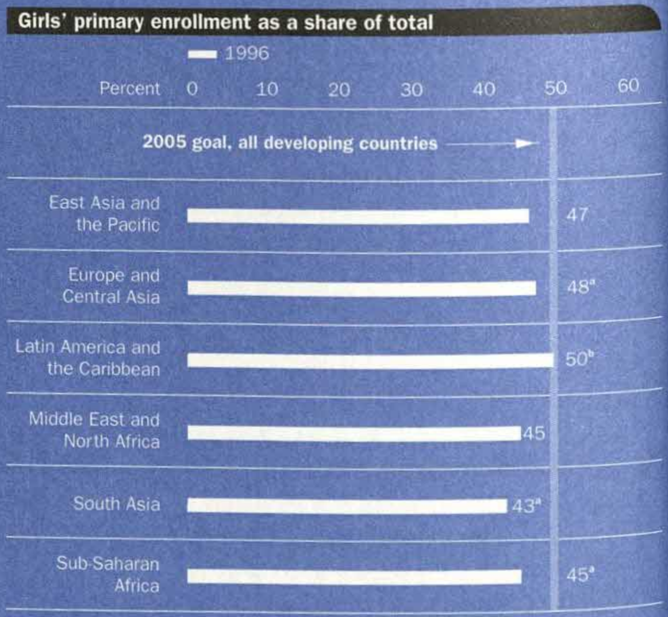
Source: World Bank staff estimates.

GOAL: to achieve universal primary education by 2015



Source: UNESCO. a. Data are for 1994 b. Data are for 1995.

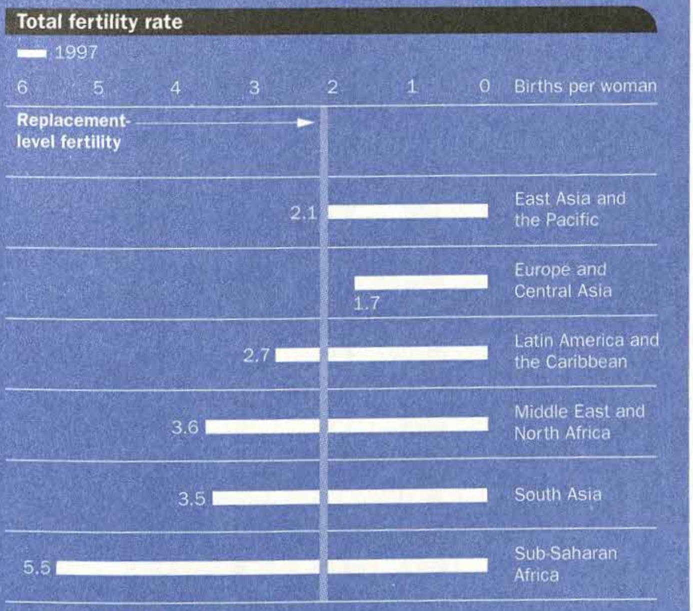
GOAL: to achieve gender equality in primary and secondary education by 2005



Source: UNESCO. a. Data are for 1994. b. Data are for 1989.

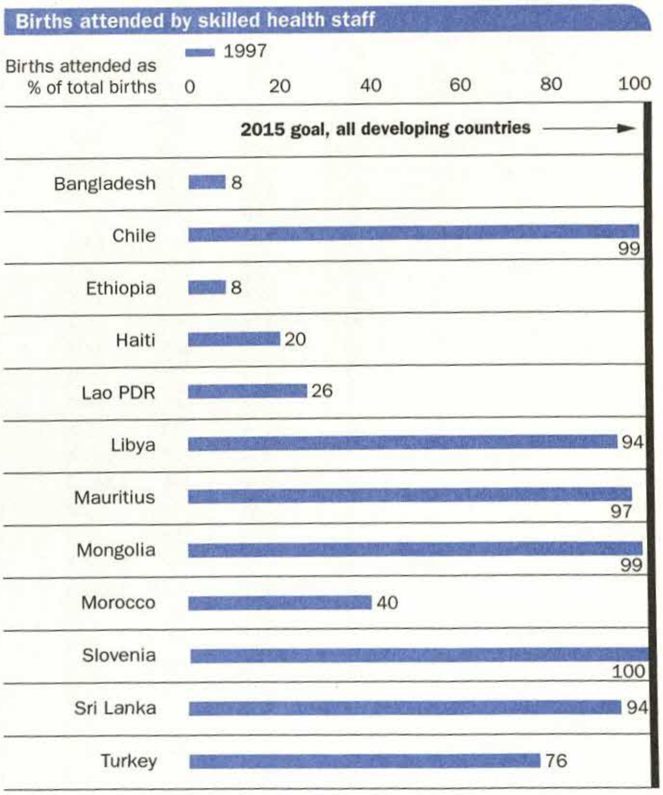
The international community has set ambitious goals for itself in the next century: reducing poverty and closing large gaps in social development. Any setbacks to the world economy make achieving these goals more difficult—and call for renewed commitments by developing countries, the international development agencies, and the advanced countries.

GOAL: to ensure access to reproductive health for all by 2015



Source: World Bank staff estimates.

GOAL: to ensure access to reproductive health for all by 2015



Source: WHO.

1.1 Size of the economy

	Population	Surface area	Population density	GNP			GNP per capita			PPP GNP[a]		
	millions 1997	thousand sq. km 1996	people per sq. km 1997	$ billions 1997[b]	Rank 1997	Average annual growth % 1996–97	$ 1997[b]	Rank 1997	Average annual growth % 1996–97	$ billions 1997	Per capita $ 1997	Rank 1997
Albania	3	29	120	2.5	139	–7.1	760	151	–8.2	7[c]	2,170[c]	154
Algeria	29	2,382	12	43.9	54	1.7	1,500	122	–0.5	124[c]	4,250[c]	106
Angola	12	1,247	9	3.0	134	0.4	260	193	–2.5	10[c]	820[c]	200
Argentina	36	2,780	13	319.3	17	8.1	8,950	57	6.7	360	10,100	64
Armenia	4	30	134	2.1	148	8.6	560	159	8.2	10	2,540	143
Australia	19	7,741	2	382.7	14	0.6	20,650	23	–0.6	362	19,510	24
Austria	8	84	97	225.4	22	0.8	27,920	12	0.7	178	22,010	16
Azerbaijan	8	87	87	3.9	125	3.1	510	163	2.5	12	1,520	170
Bangladesh	124	144	935	44.1	53	6.3	360	179	4.6	135	1,090	189
Belarus	10	208	50	22.1	63	11.1	2,150	105	11.4	49	4,820	98
Belgium	10	33	310	272.4	20	2.4	26,730	14	2.1	235	23,090	13
Benin	6	113	51	2.2	142	5.6	380	175	2.7	7	1,260	182
Bolivia	8	1,099	7	7.6	97	3.7	970	141	1.4	22	2,810	139
Bosnia and Herzegovina	2	51	44	..	..	..	..[d]	..	..	..	..	..
Botswana	2	582	3	5.1	108	5.5	3,310	88	3.0	11	7,430	78
Brazil	164	8,547	19	784.0	8	3.3	4,790	73	1.9	1,039	6,350	90
Bulgaria	8	111	76	9.8	85	–6.5	1,170	132	–6.0	32	3,870	115
Burkina Faso	10	274	37	2.6	138	5.7	250	196	3.2	11[c]	1,000[c]	193
Burundi	6	28	245	0.9	174	0.7	140	207	–1.5	4[c]	620[c]	207
Cambodia	10	181	58	3.2	133	1.0	300	187	–1.4	13[c]	1,290[c]	180
Cameroon	14	475	29	8.6	89	4.6	620	158	1.7	25	1,770	159
Canada	30	9,971	3	595.0	9	4.0	19,640	25	2.9	659	21,750	17
Central African Republic	3	623	5	1.1	171	5.6	320	185	3.6	4[c]	1,310[c]	178
Chad	7	1,284	6	1.6	163	6.7	230	198	3.5	7[c]	950[c]	195
Chile	15	757	19	70.5	43	7.2	4,820	72	5.7	179	12,240	55
China	1,227	9,597[e]	130	1,055.4	7	8.5	860	145	7.4	3,770	3,070	135
Hong Kong, China	7	1	6,375	163.8[f]	27	5.2	25,200[f]	19	2.1	158	24,350	9
Colombia	40	1,139	38	87.1	40	3.2	2,180	104	1.2	263[c]	6,570[c]	83
Congo, Dem. Rep.	47	2,345	20	5.2	107	–5.7	110	209	–8.6	36[c]	760[c]	201
Congo, Rep.	3	342	8	1.8	160	0.0	670	156	–2.7	3	1,290	180
Costa Rica	3	51	67	9.3	87	3.0	2,680	95	1.7	23	6,510	85
Côte d'Ivoire	14	322	44	10.2	84	6.8	710	154	4.3	24	1,690	161
Croatia	5	57	85	19.3	70	3.7	4,060	78	3.8	23	4,930	97
Cuba	11	111	100	..	..	..	..[g]	..	..	..	..	..
Czech Republic	10	79	133	54.0	48	1.0	5,240	70	1.2	107	10,380	63
Denmark	5	43	124	184.3	25	4.1	34,890	7	3.6	124	23,450	12
Dominican Republic	8	49	165	14.1	78	8.3	1,750	113	6.4	38	4,690	102
Ecuador	12	284	42	18.8	72	6.0	1,570	117	3.9	56	4,700	101
Egypt, Arab Rep.	60	1,001	60	72.2	42	6.4	1,200	129	4.5	186	3,080	134
El Salvador	6	21	280	10.7	82	4.1	1,810	110	1.8	17	2,860	138
Eritrea	4	118	36	0.9	176	13.5	230	198	10.4	4[c]	1,040[c]	192
Estonia	1	45	35	4.9	111	8.0	3,360	86	8.6	7	5,090	94
Ethiopia	60	1,104	58	6.5	103	5.7	110	209	3.0	30	500	209
Finland	5	338	17	127.4	32	6.2	24,790	20	5.9	101	19,660	23
France	59	552	106	1,541.6	4	3.6	26,300	15	3.2	1,301	22,210	15
Gabon	1	268	4	4.8	114	5.9	4,120	77	3.3	8	6,560	84
Gambia, The	1	11	115	0.4	194	5.2	340	180	2.1	2[c]	1,440[c]	175
Georgia	5	70	78	4.7	115	13.2	860	145	13.1	11	1,980	156
Germany	82	357	235	2,321.0	3	1.9	28,280	11	1.7	1,737	21,170	19
Ghana	18	239	77	7.0	99	4.3	390	173	1.7	29[c]	1,610[c]	165
Greece	11	132	81	122.4	33	1.1	11,640	49	0.7	132	12,540	54
Guatemala	11	109	94	16.6	75	4.6	1,580	116	1.8	43	4,060	110
Guinea	7	246	27	3.8	126	4.3	550	160	1.9	12	1,790	158
Guinea-Bissau	1	36	40	0.3	200	6.8	230	198	4.4	..	..	..
Haiti	7	28	266	2.9	136	1.0	380	175	–1.1	9[c]	1,260[c]	182
Honduras	6	112	52	4.4	118	6.4	740	152	3.5	14	2,260	150

Size of the economy 1.1

	Population	Surface area	Population density	GNP			GNP per capita			PPP GNP[a]		
	millions 1997	thousand sq. km 1996	people per sq. km 1997	$ billions 1997[b]	Rank 1997	Average annual growth % 1996–97	$ 1997[b]	Rank 1997	Average annual growth % 1996–97	$ billions 1997	Per capita $ 1997	Rank 1997
Hungary	10	93	110	45.8	52	4.7	4,510	75	5.1	71	6,970	80
India	962	3,288	318	357.4	15	6.1	370	177	4.3	1,599	1,660	163
Indonesia	200	1,905	109	221.5	23	4.3	1,110	135	2.6	679	3,390	125
Iran, Islamic Rep.	61	1,633	37	108.6	35	3.2	1,780	112	1.5	347	5,690	92
Iraq	22	438	49	..	..	..	..[g]	..	..	..	..	..
Ireland	4	70	53	65.1	44	8.2	17,790	28	7.3	64	17,420	31
Israel	6	21	276	94.4	38	1.9	16,180	32	–0.6	103	17,680	30
Italy	58	301	195	1,160.4	6	1.6	20,170	24	1.4	1,156	20,100	22
Jamaica	3	11	234	4.0	123	–2.3	1,550	119	–2.9	9	3,330	129
Japan	126	378	334	4,812.1	2	1.8	38,160	4	1.5	3,076	24,400	8
Jordan	4	89	49	6.8	100	0.9	1,520	120	–1.8	15	3,350	127
Kazakhstan	16	2,717	6	21.3	64	1.7	1,350	125	2.4	56	3,530	124
Kenya	29	580	49	9.7	86	2.9	340	180	0.4	33	1,160	184
Korea, Dem. Rep.	23	121	188	..	..	..	..[g]	..	..	..	..	..
Korea, Rep.	46	99	461	485.2	11	4.9	10,550	53	3.9	618	13,430	52
Kuwait	2	18	95	..	..	..	..[h]	..	..	..	..	..
Kyrgyz Republic	5	199	24	2.2	143	8.6	480	166	7.2	10	2,180	153
Lao PDR	5	237	20	1.9	155	6.5	400	171	3.8	6	1,300	179
Latvia	2	65	40	6.0	105	6.6	2,430	101	7.7	10	3,970	113
Lebanon	4	10	399	13.9	79	..	3,350	87	..	25	6,090	91
Lesotho	2	30	65	1.4	167	4.5	680	155	2.1	5[c]	2,490[c]	144
Libya	5	1,760	3	..	..	..	..[i]	..	..	..	..	..
Lithuania	4	65	57	8.4	91	4.0	2,260	103	4.1	15	4,140	107
Macedonia, FYR	2	26	78	2.2	145	1.2	1,100	136	0.4	6[c]	3,180[c]	132
Madagascar	14	587	24	3.6	128	4.7	250	196	1.5	13	900	197
Malawi	10	118	106	2.1	147	5.2	210	202	2.5	7	700	204
Malaysia	22	330	64	98.2	37	7.5	4,530	74	4.8	168	7,730	77
Mali	10	1,240	8	2.7	137	6.6	260	193	3.5	7	720	202
Mauritania	2	1,026	2	1.1	172	5.0	440	168	2.1	4[c]	1,650[c]	164
Mauritius	1	2	559	4.4	117	5.2	3,870	80	3.9	11	9,230	69
Mexico	94	1,958	49	348.6	16	8.2	3,700	81	6.3	765[c]	8,110[c]	73
Moldova	4	34	131	2.0	152	–0.3	460	167	0.0	6	1,450	174
Mongolia	3	1,567	2	1.0	173	3.3	390	173	1.5	4[c]	1,490[c]	171
Morocco	27	447	60	34.4	56	–2.2	1,260	128	–3.9	88	3,210	131
Mozambique	17	802	21	2.4	141	13.3	140	207	10.5	12[c]	690[c]	205
Myanmar	44	677	66	..	..	..	..[d]	..	..	..	..	..
Namibia	2	824	2	3.4	131	1.2	2,110	106	–1.3	8[c]	5,100[c]	93
Nepal	22	147	152	4.9	112	4.2	220	201	1.7	24	1,090	189
Netherlands	16	41	457	403.1	12	3.4	25,830	18	2.8	332	21,300	18
New Zealand	4	271	14	59.5	47	0.9	15,830	35	–0.4	59	15,780	38
Nicaragua	5	130	37	1.9	156	13.5	410	170	10.4	9[c]	1,820[c]	157
Niger	10	1,267	7	2.0	153	3.5	200	205	0.0	8[c]	830[c]	199
Nigeria	118	924	126	33.4	57	5.1	280	191	2.1	102	860	198
Norway	4	324	14	159.0	28	3.4	36,100	5	2.8	107	24,260	10
Oman	2	212	10	..	..	..	..[i]	..	..	..	..	..
Pakistan	128	796	163	64.6	45	0.0	500	164	–2.4	202	1,580	168
Panama	3	76	36	8.4	90	4.3	3,080	92	2.5	19	6,890	81
Papua New Guinea	5	463	10	4.2	120	–14.0	930	142	–15.9	..	..	..
Paraguay	5	407	12	10.2	83	10.2	2,000	108	7.4	20	3,860	116
Peru	24	1,285	19	63.7	46	7.3	2,610	98	5.4	112	4,580	103
Philippines	74	300	241	88.4	39	5.3	1,200	129	3.0	270	3,670	119
Poland	39	323	127	138.9	30	6.8	3,590	83	6.7	251	6,510	85
Portugal	10	92	109	109.5	34	4.5	11,010	52	4.3	141	14,180	47
Puerto Rico	4	9	426	..	..	..	..[i]	..	..	..	..	..
Romania	23	238	98	31.8	60	–6.7	1,410	124	–6.5	96	4,270	105
Russian Federation	147	17,075	9	394.9	13	0.3	2,680	95	0.6	631	4,280	104

1.1 Size of the economy

	Population	Surface area	Population density	GNP			GNP per capita			PPP GNP^{a}		
	millions 1997	thousand sq. km 1996	people per sq. km 1997	$ billions 1997^{b}	Rank 1997	Average annual growth % 1996–97	$ 1997^{b}	Rank 1997	Average annual growth % 1996–97	$ billions 1997	Per capita $ 1997	Rank 1997
Rwanda	8	26	273	1.7	162	10.8	210	202	–5.6	5	650	206
Saudi Arabia	20	2,150	9	143.4	29	1.9	7,150	64	–1.4	211^{c}	10,540^{c}	61
Senegal	9	197	44	4.8	113	5.4	540	161	2.5	15	1,690	161
Sierra Leone	5	72	65	0.8	179	–18.6	160	206	–20.6	2	410	210
Singapore	3	1	4,991	101.8	36	8.8	32,810	8	6.7	91	29,230	3
Slovak Republic	5	49	111	19.8	66	6.1	3,680	82	5.3	42	7,860	74
Slovenia	2	20	99	19.5	68	3.6	9,840	54	3.8	24	11,880	57
South Africa	41	1,221	33	130.2	31	1.3	3,210	89	–0.4	292^{c}	7,190^{c}	79
Spain	39	506	79	569.6	10	3.0	14,490	38	2.8	617	15,690	39
Sri Lanka	19	66	283	14.8	77	7.3	800	148	5.9	46	2,460	146
Sudan	28	2,506	11	7.9	94	6.4	290	189	4.2	38^{c}	1,370^{c}	177
Sweden	9	450	21	231.9	21	1.4	26,210	16	1.3	168	19,010	25
Switzerland	7	41	179	305.2	18	2.7	43,060	3	2.5	188	26,580	7
Syrian Arab Republic	15	185	79	16.6	74	3.6	1,120	134	0.9	45	3,000	136
Tajikistan	6	143	42	2.0	149	2.2	330	183	0.5	7	1,100	188
Tanzania	31	945	35	6.6^{j}	101	3.9	210^{j}	202	1.2	19	620	207
Thailand	61	513	117	165.8	26	–1.1	2,740	94	–2.1	393	6,490	87
Togo	4	57	78	1.5	164	4.8	340	180	2.0	6^{c}	1,460^{c}	173
Trinidad and Tobago	1	5	253	5.6	106	7.9	4,250	76	7.0	8	6,460	89
Tunisia	9	164	58	19.4	69	10.8	2,110	106	9.2	47	5,050	95
Turkey	64	775	81	199.3	24	8.6	3,130	91	6.8	412	6,470	88
Turkmenistan	5	488	10	3.0	135	–24.0	640	157	–25.0	7	1,410	176
Uganda	20	241	99	6.6	102	6.0	330	183	3.0	24^{c}	1,160^{c}	184
Ukraine	51	604	88	52.6	50	–3.2	1,040	139	–2.4	110	2,170	154
United Arab Emirates	3	84	29	..	..	..	..^{h}	..	..	..	..	..
United Kingdom	59	245	243	1,231.3	5	4.0	20,870	22	3.7	1,222	20,710	20
United States	268	9,364	29	7,783.1	1	3.8	29,080	10	2.8	7,783	29,080	4
Uruguay	3	177	19	20.0	65	5.0	6,130	69	4.2	30	9,110	70
Uzbekistan	24	447	56	24.2	61	..	1,020	140	..	..	..	..
Venezuela	23	912	25	79.3	41	7.4	3,480	85	5.2	197	8,660	71
Vietnam	77	332	232	24.0	62	5.6	310	186	3.8	122	1,590	167
West Bank and Gaza	3	..	..	..	..	..	..^{g}	..	..	..	..	..
Yemen, Rep.	16	528	30	4.4	119	2.0	270	192	–0.5	12	720	202
Yugoslavia, FR (Serb./Mont.)	11	102	104	..	..	..	..^{g}	..	..	..	..	..
Zambia	9	753	12	3.5	129	4.4	370	177	1.8	9	910	196
Zimbabwe	11	391	29	8.2	92	2.1	720	153	0.1	26	2,240	151
World	5,820 s	133,567 s	44 w	30,125 t		3.3 w	5,180 w		1.8 w	36,440 t	6,260 w	
Low income	2,036	31,244	66	712		4.8	350		2.6	2,842	1,400	
Middle income	2,857	70,141	41	5,411		4.8	1,890		3.6	12,345	4,320	
Lower middle income	2,283	47,035	49	2,803		4.3	1,230		3.2	7,989	3,500	
Upper middle income	574	23,106	25	2,608		5.4	4,540		3.9	4,356	7,590	
Low & middle income	4,893	101,385	49	6,124		4.8	1,250		3.2	15,187	3,100	
East Asia & Pacific	1,751	16,284	109	1,700		6.2	970		4.9	5,546	3,170	
Europe & Central Asia	474	24,209	20	1,096		2.8	2,310		2.6	2,095	4,420	
Latin America & Carib.	494	20,462	24	1,945		5.6	3,940		3.9	3,325	6,730	
Middle East & N. Africa	280	11,000	25	578		2.9	2,070		0.8	1,294	4,630	
South Asia	1,281	5,140	263	493		5.3	380		3.4	2,033	1,590	
Sub-Saharan Africa	612	24,290	25	311		3.0	510		0.2	893	1,460	
High income	927	32,182	30	24,001		3.0	25,890		2.3	21,253	22,930	
Europe EMU	291	2,374	127	6,815		2.6	23,450		2.3	5,878	20,230	

a. PPP is purchasing power parity; see *Definitions*. b. Calculated using the World Bank Atlas method. c. The estimate is based on regression; others are extrapolated from the latest International Comparison Programme benchmark estimates. d. Estimated to be low income ($785 or less). e. Includes Taiwan, China. f. GNP data refer to GDP. g. Estimated to be lower middle income ($786 to $3,125). h. Estimated to be high income ($9,656 or more). i. Estimated to be upper middle income ($3,126 to $9,655). j. Data refer to mainland Tanzania only.

Size of the economy 1.1

About the data

Population, land area, and output are basic measures of the size of an economy. They also provide a broad indication of actual and potential resources. Therefore, population, land area, and output—as measured by gross national product (GNP) or gross domestic product (GDP)—are used throughout the *World Development Indicators* to normalize other indicators.

Population estimates are generally based on extrapolations from the most recent national census. See *About the data* for tables 2.1 and 2.2 for further discussion of the measurement of population and population growth.

The surface area of a country or economy includes inland bodies of water and some coastal waterways. Surface area thus differs from land area, which excludes bodies of water, and from gross area, which may include offshore territorial waters. Land area is particularly important for understanding the agricultural capacity of an economy and the effects of human activity on the environment. (See tables 3.1–3.4 for other measures of land area, rural population density, land use, and productivity.) Recent innovations in satellite mapping techniques and computer databases have resulted in more precise measurements of land and water areas.

GNP, the broadest measure of national income, measures the total domestic and foreign value added claimed by residents. GNP comprises GDP plus net receipts of primary income from nonresident sources. The World Bank uses GNP per capita in U.S. dollars to classify countries for analytical purposes and to determine borrowing eligibility. See the *Users guide* for definitions of the income groups used in this book. Also see *About the data* for tables 4.1 and 4.2 for further discussion of the usefulness of national income as a measure of productivity or welfare.

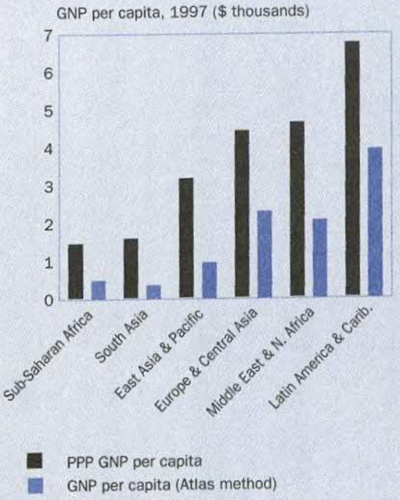
When calculating GNP in U.S. dollars from GNP reported in national currencies, the World Bank follows its Atlas conversion method. This involves using a three-year average of exchange rates to smooth the effects of transitory exchange rate fluctuations. See *Statistical methods* for further discussion of the Atlas method. Note that growth rates are calculated from data in constant prices and national currency units, not from the Atlas estimates.

Because exchange rates do not always reflect international differences in relative prices, this table also shows GNP and GNP per capita estimates converted into international dollars using purchasing power parities (PPPs). PPPs provide a standard measure of real price levels between countries, just as conventional price indexes calculate real values over time. The PPP conversion factors used here are derived from the most recent round of price surveys—covering 118 countries—conducted by the International Comparison Programme (ICP). The surveys, completed in 1996, are based on a 1993 reference year. Estimates for countries not included in the survey are derived from statistical models using available data. See *About the data* for tables 4.11 and 4.12 for more information on the ICP and the calculation of PPPs.

All economies shown in the *World Development Indicators* are ranked by size, including those that appear in table 1.6. Ranks are shown only in table 1.1. (The *World Bank Atlas* includes a table comparing the GNP per capita rankings based on the Atlas method with those based on the PPP method for all economies with available data.) No rank is shown for economies for which numerical estimates of GNP per capita are not published. Economies with missing data are included in the ranking process at their approximate level, so that the relative order of other economies remains consistent. In 1997 Luxembourg and Liechtenstein were judged to have the highest values of GNP per capita in the world, but exact values were not available at the time of publication. Therefore, the highest rank for GNP per capita shown in the *World Development Indicators* and the *Atlas* is 3.

Figure 1.1

Where money goes farther



Source: World Bank staff estimates.

Using purchasing power parities to evaluate GNP puts a higher value on nontraded goods and services, resulting in a higher value of GNP for many developing economies.

Definitions

• **Population** is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship—except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of the country of origin. The values shown are midyear estimates for 1997. See also table 2.1. • **Surface area** is a country's total area including areas under inland bodies of water and some coastal waterways. • **Population density** is midyear population divided by land area in square kilometers. • **Gross national product** (GNP) is the sum of value added by all resident producers plus any taxes (less subsidies) that are not included in the valuation of output plus net receipts of primary income (employee compensation and property income) from nonresident sources. Data are in current U.S. dollars converted using the World Bank Atlas method (see *Statistical methods*). Growth is calculated from constant price GNP in national currency units. • **GNP per capita** is gross national product divided by midyear population. GNP per capita in U.S. dollars is converted using the World Bank Atlas method. Growth is calculated from constant price GNP per capita in national currency units. • **PPP GNP** is gross national product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNP as a U.S. dollar in the United States. All ranks are calculated for economies reporting data.

Data sources

Population estimates are prepared by World Bank staff from a variety of sources (see *Data sources* for table 2.1). Data on surface and land area are from the Food and Agriculture Organization (see *Data sources* for table 3.1). GNP and GNP per capita are estimated by World Bank staff based on national accounts data collected by Bank staff during economic missions or reported by national statistical offices to other international organizations such as the Organisation for Economic Co-operation and Development. Purchasing power parity conversion factors are estimates by World Bank staff based on data collected by the International Comparison Programme.

1.2 Development progress

	Private consumption per capita average annual % growth 1980–97 uncorrected	Private consumption per capita distribution corrected	Net primary enrollment ratio[a] Male % of relevant age group 1980	Net primary enrollment ratio[a] Male % of relevant age group 1996	Net primary enrollment ratio[a] Female % of relevant age group 1980	Net primary enrollment ratio[a] Female % of relevant age group 1996	Infant mortality rate per 1,000 live births 1970	Infant mortality rate per 1,000 live births 1997	Under-five mortality rate per 1,000 1970	Under-five mortality rate per 1,000 1997	Maternal mortality ratio per 100,000 live births 1990–97[b]	Safe water % of population with access 1996
Albania	..	..	..	*101*	..	*103*	66	26	82	40	28[c]	*76*
Algeria	–1.8	–1.2	91	97	71	91	139	32	192	39	140[c]	..
Angola	–7.8	..	..	..	..	..	178	125	301	209	1,500[d]	32
Argentina	..	..	..	..	..	..	52	22	71	24	100[d]	65
Armenia	..	..	..	..	..	..	..	15	..	*20*	21[c]	..
Australia	1.7	1.1	102	95	102	95	18	5	20	7	9[d]	*99*
Austria	2.0	1.6	87	*100*	88	*100*	26	5	33	7	10[d]	..
Azerbaijan	..	..	..	..	..	..	..	20	..	23	44[c]	..
Bangladesh	2.1	1.5	*69*	..	*48*	..	140	75	239	104	850[d]	*84*
Belarus	–3.5	–2.7	..	*87*	..	*84*	..	12	..	*17*	22[c]	..
Belgium	1.6	1.2	97	*98*	98	*98*	21	6	29	7	10[d]	..
Benin	–0.7	..	..	80	..	47	146	88	..	149	500[e]	72
Bolivia	0.1	0.0	84	..	74	..	153	66	243	96	370[e]	*70*
Bosnia and Herzegovina	..	..	..	..	..	..	59	13	..	..	..	..
Botswana	5.4	..	69	*79*	82	83	95	58	139	88	250[d]	*70*
Brazil	0.5	0.2	..	..	..	..	95	34	135	44	160[e]	69
Bulgaria	–0.6	–0.4	96	93	96	91	27	18	32	24	20[c]	..
Burkina Faso	0.3	..	18	*37*	11	*24*	141	99	278	169	930[d]	..
Burundi	–0.7	..	23	..	16	..	138	119	228	200	1,300[d]	*58*
Cambodia	..	..	..	..	..	..	161	103	244	147	900[d]	*13*
Cameroon	–1.3	..	..	..	..	..	126	52	215	78	550[d]	*41*
Canada	1.3	0.9	*96*	*96*	*96*	*94*	19	6	23	8	6[d]	99
Central African Republic	–1.2	..	73	..	41	..	139	98	248	160	700[e]	*23*
Chad	0.0	..	..	*59*	..	33	171	100	252	182	840[e]	*24*
Chile	3.8	1.7	..	89	..	87	77	11	96	13	65[c]	91
China	7.7	4.5	..	101	..	102	69	32	120	39	95[f]	*83*
Hong Kong, China	5.2	..	95	*88*	96	*91*	19	5	..	..	7[d]	..
Colombia	1.2	0.5	..	..	..	..	70	24	113	30	100[d]	75
Congo, Dem. Rep.	–4.5	..	*82*	*60*	*60*	*47*	131	92	245	148	870[d]	..
Congo, Rep.	–0.2	..	99	..	93	..	101	90	160	145	890[d]	..
Costa Rica	0.8	0.4	89	..	90	..	62	12	77	15	55[d]	100
Côte d'Ivoire	–2.3	–1.5	..	*63*	..	47	135	87	240	140	810[e]	*72*
Croatia	..	..	..	*83*	..	*82*	..	9	..	10	12[c]	63
Cuba	..	..	95	101	95	100	39	7	43	9	36[c]	91
Czech Republic	..	..	..	*92*	..	*91*	21	6	24	8	2[c]	..
Denmark	1.7	1.3	96	*99*	95	*99*	14	6	19	6	9[d]	..
Dominican Republic	–0.2	–0.1	*73*	*79*	*73*	*83*	98	40	128	47	110[d]	73
Ecuador	–0.2	–0.1	..	*93*	..	*94*	100	33	140	39	150[d]	55
Egypt, Arab Rep.	2.0	1.3	..	*98*	..	88	158	51	235	66	170[d]	*84*
El Salvador	2.9	1.5	..	*78*	..	*78*	107	32	160	39	300[d]	53
Eritrea	..	..	..	32	..	29	..	62	..	95	1,000[d]	*7*
Estonia	–2.2	–1.3	..	*87*	..	*86*	20	10	27	13	52[c]	..
Ethiopia	–1.3	..	..	*29*	..	*18*	158	107	239	175	1,400[d]	26
Finland	1.4	1.1	..	*98*	..	*99*	13	4	16	5	11[d]	*98*
France	1.7	1.1	*100*	*100*	*99*	*100*	18	5	24	6	15[d]	100
Gabon	–2.3	..	..	..	..	..	138	87	232	136	500[d]	*67*
Gambia, The	–2.6	..	66	*72*	34	*57*	185	78	319	*110*	1,050[d]	*50*
Georgia	..	..	..	87	..	87	..	17	..	21	19[c]	..
Germany	..	..	..	*100*	..	*100*	23	5	26	6	22[d]	..
Ghana	0.2	0.1	..	..	..	..	112	66	186	102	740[d]	*65*
Greece	1.8	..	96	*90*	97	*90*	30	7	54	9	10[d]	..
Guatemala	0.1	0.0	*66*	..	*58*	..	107	43	168	55	190[e]	67
Guinea	1.0	0.5	..	..	..	..	181	120	345	182	880[e]	*55*
Guinea-Bissau	0.0	0.0	63	..	31	..	185	130	316	220	910[d]	53
Haiti	..	..	..	..	..	..	141	71	221	125	600[e]	39
Honduras	–0.1	0.0	78	*89*	78	*91*	110	36	170	48	220[d]	77

Development progress 1.2

	Private consumption per capita		Net primary enrollment ratio[a]				Infant mortality rate		Under-five mortality rate		Maternal mortality ratio	Safe water
	average annual % growth 1980–97		Male % of relevant age group		Female % of relevant age group		per 1,000 live births		per 1,000		per 100,000 live births	% of population with access
	uncorrected	distribution corrected	1980	1996	1980	1996	1970	1997	1970	1997	1990–97[b]	1996
Hungary	–0.1	–0.1	94	*97*	95	*96*	36	10	39	12	14[c]	..
India	2.6	1.9	..	..	..	..	137	71	206	88	440[e]	*85*
Indonesia	4.5	3.0	93	*99*	83	*95*	118	47	172	60	390[e]	*65*
Iran, Islamic Rep.	0.2	..	..	*91*	..	88	131	32	208	35	120[d]	90
Iraq	..	..	103	*81*	94	*71*	102	112	127	140	310[d]	*77*
Ireland	2.7	1.8	100	*100*	100	*100*	20	5	27	7	10[d]	..
Israel	3.3	2.1	..	..	..	..	25	7	27	8	7[d]	99
Italy	2.2	1.5	..	*100*	..	*100*	30	5	33	7	12[d]	..
Jamaica	2.2	1.3	95	..	97	..	43	12	62	14	120[d]	93
Japan	2.9	..	101	*103*	101	*103*	13	4	21	6	18[c]	*96*
Jordan	–1.2	–0.7	..	..	..	..	..	29	..	35	150[d]	98
Kazakhstan	..	..	..	..	..	..	..	24	..	29	53[c]	..
Kenya	0.9	0.4	92	..	89	..	102	74	156	112	650[d]	*45*
Korea, Dem. Rep.	..	..	..	..	..	..	51	56	70	74	70[d]	100
Korea, Rep.	7.0	..	104	*92*	105	93	46	9	54	11	30[c]	83
Kuwait	..	..	89	*54*	80	*53*	48	12	59	13	20[c]	100
Kyrgyz Republic	..	..	..	*97*	..	*93*	..	28	..	36	32[c]	*81*
Lao PDR	..	..	..	*76*	..	69	146	98	218	*170*	660[d]	*51*
Latvia	..	..	..	92	..	87	21	15	27	19	15[c]	..
Lebanon	..	..	..	..	..	..	50	28	50	32	300[d]	*94*
Lesotho	–2.8	–1.2	55	*64*	79	76	134	93	190	137	610[d]	62
Libya	..	..	..	..	..	..	122	24	160	30	220[d]	*95*
Lithuania	..	..	..	..	..	..	24	10	30	13	13[c]	..
Macedonia, FYR	..	..	..	96	..	95	..	16	..	17	22[c]	..
Madagascar	–2.4	–0.2	..	*60*	..	*62*	153	94	285	158	500[e]	*16*
Malawi	0.6	..	48	*66*	38	*71*	193	133	330	224	620[e]	*60*
Malaysia	3.1	1.6	..	*102*	..	*102*	45	11	63	14	34[c]	89
Mali	–1.1	..	..	*33*	..	*22*	204	118	391	235	580[e]	*48*
Mauritania	0.1	0.1	..	*61*	..	*53*	148	92	250	149	800[d]	*64*
Mauritius	5.2	..	80	98	79	98	56	20	86	23	110[c]	*100*
Mexico	0.1	0.0	..	..	..	..	73	31	110	38	110[d]	95
Moldova	..	..	..	..	..	..	..	20	..	24	23[c]	56
Mongolia	..	..	..	79	..	83	102	52	150	68	65[d]	*54*
Morocco	1.6	1.0	75	83	47	65	128	51	187	67	370[g]	57
Mozambique	–2.3	..	*39*	*45*	*34*	*34*	171	135	281	201	1,100[d]	*24*
Myanmar	..	..	..	..	..	..	128	79	179	131	580[d]	*60*
Namibia	–2.1	..	..	..	..	..	118	65	155	101	220[e]	*60*
Nepal	2.1	1.3	..	..	..	..	166	83	234	117	1,500[d]	*59*
Netherlands	1.6	1.1	91	*100*	94	*99*	13	5	15	7	12[d]	*99*
New Zealand	0.9	..	*105*	100	*105*	100	17	7	20	7	25[d]	90
Nicaragua	–2.7	–1.3	70	*77*	71	*79*	104	43	168	57	160[d]	62
Niger	–2.6	–1.7	..	*30*	..	19	170	118	320	..	590[e]	*48*
Nigeria	–4.7	–2.6	..	..	..	..	139	77	201	122	1,000[d]	50
Norway	1.5	1.2	98	*99*	99	*99*	13	4	15	6	6[d]	100
Oman	..	..	54	70	31	68	119	18	200	28	..	88
Pakistan	2.0	1.4	..	..	..	..	142	95	183	136	340[d]	*62*
Panama	1.8	0.8	89	..	89	..	47	21	71	26	55[d]	84
Papua New Guinea	–1.1	–0.5	..	..	..	..	112	61	130	82	370[d]	*31*
Paraguay	1.9	0.8	90	*91*	88	91	55	23	76	28	190[e]	39
Peru	–0.5	–0.3	*93*	*91*	*89*	*90*	108	40	178	52	280[d]	66
Philippines	0.7	0.4	95	..	92	..	67	35	90	41	210[e]	*83*
Poland	0.9	0.6	98	*95*	98	*94*	37	10	36	12	5[c]	..
Portugal	3.1	..	97	..	100	..	56	6	62	8	15[d]	*82*
Puerto Rico	..	..	..	..	..	..	29	11	..	..	21[c]	97
Romania	0.3	0.2	..	96	..	95	49	22	..	26	41[c]	*62*
Russian Federation	..	..	..	*93*	..	*93*	..	17	..	25	53[c]	..

1.2 Development progress

	Private consumption per capita		Net primary enrollment ratio[a]				Infant mortality rate		Under-five mortality rate		Maternal mortality ratio	Safe water
	average annual % growth 1980–97		Male % of relevant age group		Female % of relevant age group		per 1,000 live births		per 1,000		per 100,000 live births	% of population with access
	uncorrected	distribution corrected	1980	1996	1980	1996	1970	1997	1970	1997	1990–97[b]	1996
Rwanda	–1.3	–0.9	62	..	57	..	142	124	210	209	1,300[d]	..
Saudi Arabia	..	..	60	63	37	60	119	21	185	28	18[c]	*93*
Senegal	–0.8	–0.4	44	64	30	52	135	70	279	110	510[e]	*50*
Sierra Leone	–3.2	–1.2	*55*	..	*39*	..	197	170	363	286	..	*34*
Singapore	4.9	..	100	..	99	..	20	4	27	6	10[d]	100
Slovak Republic	..	..	..	..	..	..	25	9	29	13	8[c]	..
Slovenia	..	..	..	95	..	94	24	5	29	6	5[c]	*98*
South Africa	–0.3	–0.1	..	..	..	..	79	48	108	65	230[d]	*59*
Spain	2.2	1.5	102	*105*	102	*104*	28	5	34	7	7[d]	..
Sri Lanka	2.8	1.9	..	..	..	..	53	14	100	19	30[c]	70
Sudan	..	..	..	..	..	..	118	71	177	115	370[c]	60
Sweden	0.7	0.5	*96*	*102*	*97*	*102*	11	4	15	5	7[d]	..
Switzerland	0.6	0.4	..	..	..	..	15	5	18	6	6[d]	*100*
Syrian Arab Republic	1.0	..	99	95	80	87	96	31	129	38	180[c]	*88*
Tajikistan	..	..	..	..	..	..	..	30	..	36	58[c]	*69*
Tanzania	..	..	*68*	47	*65*	48	129	85	218	136	530[e]	*49*
Thailand	5.5	2.9	..	..	..	..	73	33	102	38	200[d]	89
Togo	–0.5	..	*91*	*98*	*60*	*72*	134	86	216	138	640[d]	55
Trinidad and Tobago	–0.6	..	89	*90*	91	*89*	52	12	57	15	90[d]	96
Tunisia	1.0	0.6	92	99	72	96	121	30	201	33	170[d]	*90*
Turkey	2.3	..	..	*98*	..	*94*	144	40	201	50	180[d]	..
Turkmenistan	..	..	..	..	..	..	..	40	..	50	44[c]	*60*
Uganda	1.7	1.0	*43*	..	*35*	..	109	99	185	162	550[g]	*42*
Ukraine	..	..	..	..	..	..	22	14	..	17	30[c]	*55*
United Arab Emirates	..	..	72	*84*	75	*82*	87	8	90	11	26[d]	*98*
United Kingdom	2.6	1.8	100	*100*	100	*100*	19	6	23	7	9[c]	*100*
United States	1.9	1.1	..	*94*	..	*95*	20	7	26	*9*	12[d]	73
Uruguay	2.4	..	..	92	..	93	46	16	57	20	85[d]	89
Uzbekistan	..	..	..	..	..	..	..	*24*	..	31	24[c]	*57*
Venezuela	–0.8	–0.4	..	*83*	..	85	53	21	61	25	120[c]	79
Vietnam	..	..	..	..	..	..	104	29	157	40	105[c]	*47*
West Bank and Gaza	..	..	..	..	..	..	..	25	..	28	..	..
Yemen, Rep.	..	..	..	64	..	38	186	96	303	137	1,400[d]	39
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	54	14	..	20	12[c]	..
Zambia	–3.7	–2.0	81	*76*	73	74	106	113	181	189	650[e]	53
Zimbabwe	0.2	..	..	..	..	..	96	69	138	108	280[e]	*77*
World	**3.1 w**	**2.1 w**	**..**	**.. w**	**..**	**.. w**	**98 w**	**56 w**	**152 w**	**79 w**		***75* w**
Low income	1.1	1.2	..	..	..	..	139	82	214	118		*69*
Middle income	4.7	2.9	..	*95*	..	*94*	82	34	130	43		*79*
Lower middle income	5.6	3.4	..	100	..	*94*	81	36	133	44		*78*
Upper middle income	0.8	0.2	..	..	..	..	83	30	118	38		..
Low & middle income	3.2	2.2	..	..	..	..	107	60	168	84		*75*
East Asia & Pacific	6.8	4.0	..	101	..	102	79	37	128	47		*77*
Europe & Central Asia	..	..	..	*93*	..	*92*	..	23	..	30		..
Latin America & Carib.	0.5	0.2	..	..	..	..	84	32	123	41		75
Middle East & N. Africa	0.7	..	..	91	..	83	134	49	200	63		..
South Asia	2.5	1.8	..	..	..	..	139	77	209	100		*81*
Sub-Saharan Africa	–2.1	–1.1	..	..	..	..	137	91	222	147		*47*
High income	2.4	1.2	..	*97*	..	*97*	22	6	28	7		..
Europe EMU	2.0	1.3	..	*101*	..	*100*	25	5	29	6		..

a. Net enrollment ratios exceeding 100 indicate discrepancies between the estimates of school-age population and reported enrollment data. b. Data are for the most recent year available. c. Official estimate. d. UNICEF-WHO estimate based on statistical modeling. e. Indirect estimate based on a sample survey. f. Based on a survey covering 30 provinces. g. Based on a sample survey.

Development progress 1.2

About the data

The indicators in this table are intended to measure progress toward the development goals for the 21st century proposed by the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD) and discussed in the introduction to this section. The net enrollment ratio, infant and under-five mortality rates, maternal mortality ratio, and access to safe water are included in the set of 28 social and environmental indicators selected for monitoring development progress by the OECD, the World Bank, and the United Nations in consultation with countries that provide and those that receive development assistance.

The growth of private consumption per capita is included here as an indicator of the effect of economic development on the welfare of individuals. Positive growth rates are generally associated with a reduction in poverty, but where the distribution of income or consumption is highly unequal, the poor may not share in the improvement. The relationship between the rate of poverty reduction and the distribution of income or consumption, as measured by an index such as the Gini index, is complicated. But Ravallion (1997) has found that the rate of poverty reduction is directly proportional to the "distribution-corrected rate of growth" of private consumption per capita. The distribution-corrected rate of growth is calculated as $(1 - G)r$, where G is the Gini index (0 = perfect equality, 1 = perfect inequality) and r is the rate of growth in mean private consumption. In empirical tests covering 23 developing countries, Ravallion estimated that factor of proportionality to be 4.4, implying a growth elasticity of poverty reduction of between 3.3 for a low Gini index of 0.25 and 1.8 for a high Gini index of 0.60. Estimates of the share of people living in poverty appear in table 2.7.

Discussions of the other indicators can be found in *About the data* for tables 2.10 (net enrollment ratio), 2.15 (maternal mortality ratio), 2.18 (infant and under-five mortality rates), and 2.14 (access to safe water).

Definitions

• **Growth of private consumption per capita** is the average annual rate of change in private consumption divided by the midyear population. For the definition of private consumption see *Definitions* for table 4.10. • **Distribution-corrected growth of private consumption per capita** is 1 minus the Gini index multiplied by the annual rate of growth in private consumption per capita. • **Net primary enrollment ratio** is the ratio of the number of children of official school age (as defined by the education system) enrolled in school to the number of children of official school age in the population. • **Infant mortality rate** is the number of deaths of infants under one year of age during the indicated year per 1,000 live births in the same year. • **Under-five mortality rate** is the probability of a child born in the indicated year dying before reaching the age of five, if subject to current age-specific mortality rates. The probability is expressed as a rate per 1,000. • **Maternal mortality ratio** is the number of women who die during pregnancy and childbirth, per 100,000 live births. • **Access to safe water** is the percentage of the population with reasonable access to an adequate amount of safe water (including treated surface water and untreated but uncontaminated water, such as from springs, sanitary wells, and protected boreholes). In urban areas the source may be a public fountain or standpipe located not more than 200 meters away. In rural areas the definition implies that members of the household do not have to spend a disproportionate part of the day fetching water. An adequate amount of safe water is that needed to satisfy metabolic, hygienic, and domestic requirements—usually about 20 liters a person a day. The definition of safe water has changed over time.

Data sources

The indicators here and throughout the rest of the book have been compiled by World Bank staff from primary and secondary sources. More information about the indicators and their sources can be found in the *About the data*, *Definitions*, and *Data sources* entries that accompany each table in subsequent sections.

1.3 Gender differences

	Female population	Female advantage								
	% of total	Labor force participation ratio of female to male		Adult illiteracy rate female-male difference		Net primary enrollment ratio female-male difference		Life expectancy at birth female-male difference		Child mortality rate female-male difference
	1997	1970	1997	1970	1997	1980	1996	1970	1997	1988–98[a]
Albania	48.6	0.7	0.7	..	..	..	*3*	3	6	0
Algeria	49.4	0.3	0.3	27	25	–20	–7	2	3	..
Angola	50.6	0.9	0.9	..	..	..	..	3	3	..
Argentina	50.9	0.3	0.5	1	0	..	..	7	7	..
Armenia	51.4	0.9	0.9	..	..	..	..	6	7	..
Australia	50.1	0.5	0.8	..	..	0	1	7	6	..
Austria	50.9	0.6	0.7	..	..	1	*0*	7	6	..
Azerbaijan	51.0	0.8	0.8	..	..	..	..	8	7	..
Bangladesh	49.4	0.7	0.7	25	23	..	..	–2	0	10
Belarus	53.0	1.0	1.0	14	1	..	*–3*	8	11	..
Belgium	51.0	0.4	0.7	..	..	1	*0*	7	7	..
Benin	50.7	0.9	0.9	11	27	..	–32	2	4	1
Bolivia	50.3	0.5	0.6	25	14	–10	..	4	3	–6
Bosnia and Herzegovina	50.4	0.6	0.6	..	..	..	..	4	..	..
Botswana	51.0	1.2	0.8	–4	–5	13	4	4	2	–2
Brazil	50.5	0.3	0.5	7	0	..	..	4	8	1
Bulgaria	51.2	0.8	0.9	7	1	0	*–2*	5	7	..
Burkina Faso	50.6	1.0	0.9	10	19	–7	*–13*	4	2	3
Burundi	51.0	1.0	1.0	24	18	–8	..	3	3	13
Cambodia	51.7	1.0	1.1	..	..	..	..	3	3	..
Cameroon	50.3	0.6	0.6	26	14	..	..	3	2	11
Canada	50.4	0.5	0.8	..	..	..	*–2*	7	6	..
Central African Republic	51.4	..	..	19	26	–31	..	5	4	1
Chad	50.5	0.7	0.8	..	..	..	–26	3	3	–7
Chile	50.5	0.3	0.5	2	0	..	*–2*	6	6	–1
China	48.4	0.7	0.8	31	16	..	1	1	3	1
Hong Kong, China	49.9	0.5	0.6	27	8	1	*3*	6	6	..
Colombia	50.6	0.3	0.6	3	0	..	..	4	6	0
Congo, Dem. Rep.	50.6	0.8	0.8	..	..	..	*–13*	3	3	..
Congo, Rep.	51.1	0.7	0.8	28	15	–6	..	5	5	..
Costa Rica	49.3	0.2	0.4	1	0	1	..	4	5	..
Côte d'Ivoire	49.0	0.5	0.5	17	17	..	–16	3	1	–13
Croatia	51.6	0.6	0.8	14	3	..	*–1*	..	9	..
Cuba	49.8	0.3	0.6	0	0	0	–1	3	4	..
Czech Republic	51.3	0.8	0.9	..	..	..	*–1*	..	7	..
Denmark	50.5	0.6	0.9	..	..	0	*0*	5	5	..
Dominican Republic	49.2	0.3	0.4	4	1	..	*3*	4	4	0
Ecuador	49.8	0.2	0.4	10	4	..	*1*	3	5	–3
Egypt, Arab Rep.	49.1	0.3	0.4	29	24	..	–11	3	3	6
El Salvador	51.0	0.3	0.5	11	6	..	*1*	4	6	3
Eritrea	50.4	0.9	0.9	..	..	..	–3	3	3	–11
Estonia	53.1	1.0	1.0	..	..	..	*–2*	9	11	..
Ethiopia	49.8	0.7	0.7	14	12	..	*–10*	3	2	..
Finland	51.3	0.8	0.9	..	..	..	*1*	8	7	..
France	51.3	0.6	0.8	..	..	..	*0*	8	8	..
Gabon	50.7	0.8	0.8	..	..	..	..	3	3	..
Gambia, The	50.6	0.8	0.8	6	14	–32	*–15*	3	4	–4
Georgia	52.3	0.9	0.9	..	..	..	–1	..	8	..
Germany	51.1	0.6	0.7	..	..	..	*0*	6	6	..
Ghana	50.3	1.0	1.0	27	20	..	..	3	4	–1
Greece	50.8	0.3	0.6	16	3	1	*0*	4	5	..
Guatemala	49.6	0.2	0.4	16	15	..	..	2	6	2
Guinea	49.7	0.9	0.9	..	..	..	..	1	1	–10
Guinea-Bissau	50.8	0.7	0.7	19	31	–32	..	2	3	..
Haiti	50.9	0.9	0.8	7	5	..	..	3	5	–1
Honduras	49.6	0.3	0.4	6	1	1	*2*	4	5	..

Gender differences 1.3

	Female population	Female advantage								
	% of total	Labor force participation ratio of female to male		Adult illiteracy rate female-male difference		Net primary enrollment ratio female-male difference		Life expectancy at birth female-male difference		Child mortality rate female-male difference
	1997	1970	1997	1970	1997	1980	1996	1970	1997	1988–98[a]
Hungary	52.1	0.7	0.8	1	0	1	*–1*	6	9	..
India	48.4	0.5	0.5	30	27	..	..	–2	2	13
Indonesia	50.1	0.4	0.7	25	11	–10	*–5*	2	4	–3
Iran, Islamic Rep.	49.8	0.2	0.3	23	15	..	–3	–1	2	..
Iraq	49.1	0.2	0.2	..	..	–9	*–10*	2	2	..
Ireland	50.1	0.4	0.5	..	..	0	*0*	5	5	..
Israel	50.3	0.4	0.7	10	4	..	..	3	4	..
Italy	51.4	0.4	0.6	3	1	..	*–1*	6	7	..
Jamaica	50.4	0.8	0.9	–8	–8	2	..	3	5	..
Japan	51.0	0.6	0.7	..	..	0	*0*	5	6	..
Jordan	48.1	0.2	0.3	38	10	..	..	..	3	0
Kazakhstan	51.5	0.9	0.9	..	..	..	..	..	11	–5
Kenya	49.9	0.8	0.9	31	15	–4	..	4	2	0
Korea, Dem. Rep.	49.9	0.8	0.8	..	..	..	..	4	4	..
Korea, Rep.	49.6	0.5	0.7	14	3	1	1	4	7	..
Kuwait	47.8	0.1	0.5	20	6	–9	*–1*	4	6	..
Kyrgyz Republic	51.0	0.9	0.9	..	..	..	*–4*	..	9	1
Lao PDR	50.5	..	..	..	..	..	*–7*	3	3	..
Latvia	54.0	1.0	1.0	3	0	..	–5	9	11	..
Lebanon	50.9	0.2	0.4	25	13	..	..	4	4	..
Lesotho	50.8	0.7	0.6	–25	–21	24	11	4	3	..
Libya	48.1	0.2	0.3	43	26	..	..	3	4	–1
Lithuania	52.7	1.0	0.9	7	0	..	..	8	11	..
Macedonia, FYR	50.0	0.4	0.7	..	..	..	–2	..	4	..
Madagascar	50.2	0.8	0.8	..	..	..	*2*	3	3	–7
Malawi	50.7	1.0	1.0	38	29	–10	*5*	1	0	–12
Malaysia	49.3	0.4	0.6	24	9	..	*1*	3	5	0
Mali	50.7	0.9	0.9	7	15	..	*–11*	3	4	2
Mauritania	50.4	0.9	0.8	19	22	..	*–8*	3	3	..
Mauritius	50.1	0.2	0.5	19	8	–1	0	4	7	..
Mexico	50.5	0.2	0.5	10	4	..	..	5	6	2
Moldova	52.2	1.1	0.9	13	2	..	..	..	7	..
Mongolia	49.9	0.8	0.9	..	..	..	4	3	3	..
Morocco	50.0	0.5	0.5	24	27	–28	–18	3	4	–2
Mozambique	51.6	1.0	0.9	21	32	..	*–11*	3	3	–2
Myanmar	50.2	0.8	0.8	27	10	..	..	3	3	..
Namibia	50.2	0.7	0.7	13	3	..	..	3	2	4
Nepal	49.4	0.6	0.7	26	35	..	..	–1	–1	..
Netherlands	50.5	0.3	0.7	..	..	3	*–1*	6	6	..
New Zealand	50.8	0.4	0.8	..	..	..	0	6	5	..
Nicaragua	50.3	0.3	0.5	1	0	2	*2*	3	5	..
Niger	50.6	0.8	0.8	10	14	..	–12	3	5	20
Nigeria	50.7	0.6	0.6	20	18	..	..	3	4	84
Norway	50.2	0.4	0.9	..	..	0	*0*	6	6	..
Oman	46.7	0.1	0.2	28	22	–23	–2	2	3	..
Pakistan	48.1	0.3	0.4	23	30	..	..	0	2	15
Panama	49.5	0.3	0.5	2	1	1	..	3	5	..
Papua New Guinea	48.4	0.7	0.7	..	..	..	..	0	2	–7
Paraguay	49.6	0.4	0.4	11	3	–2	1	4	5	2
Peru	50.3	0.3	0.4	22	10	..	*–1*	3	5	1
Philippines	49.6	0.5	0.6	4	1	–3	..	3	4	–3
Poland	51.3	0.8	0.9	2	0	0	*0*	7	9	..
Portugal	52.1	0.3	0.8	12	5	3	..	7	7	..
Puerto Rico	51.7	0.4	0.6	2	0	..	..	6	9	..
Romania	50.8	0.8	0.8	9	2	..	–1	4	8	–2
Russian Federation	53.3	1.0	1.0	10	1	..	*0*	..	12	–1

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1.3 Gender differences

	Female population	Female advantage								
	% of total	Labor force participation ratio of female to male		Adult illiteracy rate female-male difference		Net primary enrollment ratio female-male difference		Life expectancy at birth female-male difference		Child mortality rate female-male difference
	1997	1970	1997	1970	1997	1980	1996	1970	1997	1988–98[a]
Rwanda	50.6	1.0	1.0	23	15	–5	..	3	2	–14
Saudi Arabia	44.6	0.1	0.2	32	19	–24	–3	3	2	..
Senegal	50.1	0.7	0.7	17	20	–14	–11	5	4	–2
Sierra Leone	51.0	0.6	0.6	..	..	..	..	3	3	..
Singapore	49.7	0.3	0.6	27	9	0	..	5	5	..
Slovak Republic	51.2	0.7	0.9	..	..	..	..	..	8	..
Slovenia	51.4	0.6	0.9	0	0	..	0	7	8	..
South Africa	51.9	0.5	0.6	4	2	..	..	6	6	..
Spain	51.1	0.3	0.6	7	2	1	*–1*	5	7	..
Sri Lanka	49.1	0.3	0.6	17	6	..	..	2	5	–1
Sudan	49.8	0.4	0.4	28	24	..	..	3	3	1
Sweden	50.6	0.6	0.9	..	..	..	*–1*	5	5	..
Switzerland	50.5	0.5	0.7	..	..	..	..	6	6	..
Syrian Arab Republic	49.4	0.3	0.4	40	30	–19	–8	3	5	..
Tajikistan	50.2	0.8	0.8	10	1	..	..	5	6	..
Tanzania	50.5	1.0	1.0	33	20	..	1	3	2	–7
Thailand	50.0	0.9	0.9	15	4	..	..	4	6	0
Togo	50.5	0.6	0.7	25	30	..	*–26*	3	3	15
Trinidad and Tobago	50.1	0.4	0.5	5	2	2	*–1*	5	5	–1
Tunisia	49.5	0.3	0.4	26	22	–20	–4	1	2	0
Turkey	49.4	0.6	0.6	33	19	..	*–4*	4	5	2
Turkmenistan	50.5	0.8	0.8	..	..	..	..	7	7	..
Uganda	50.2	0.9	0.9	29	22	..	..	2	–1	–10
Ukraine	53.5	1.0	0.9	..	..	..	..	8	11	..
United Arab Emirates	33.6	0.0	0.2	21	–3	3	*–2*	4	3	..
United Kingdom	50.9	0.6	0.8	..	..	0	*0*	6	5	..
United States	50.7	0.6	0.8	..	..	..	*0*	8	6	..
Uruguay	51.5	0.4	0.7	–1	–1	..	1	7	8	..
Uzbekistan	50.4	0.9	0.9	..	..	..	..	..	6	..
Venezuela	49.7	0.3	0.5	6	1	..	2	5	6	..
Vietnam	51.1	0.9	1.0	23	6	..	..	3	5	..
West Bank and Gaza	49.1	..	..	..	..	..	..	..	5	..
Yemen, Rep.	48.9	0.4	0.4	25	43	..	–26	0	1	6
Yugoslavia, FR (Serb./Mont.)	50.2	0.6	0.7	..	..	..	..	4	5	..
Zambia	50.4	0.8	0.8	30	16	–8	*–2*	3	0	–3
Zimbabwe	50.4	0.8	0.8	15	7	..	..	3	3	0
World	**49.6 w**	**0.6 w**	**0.7 w**	**23 w**	**15 w**	**..**	**.. w**	**3 w**	**4 w**	
Low income	49.2	0.6	0.6	27	24	..	..	0	2	
Middle income	49.6	0.6	0.7	22	11	..	–2	3	5	
Lower middle income	49.4	0.7	0.8	25	13	..	–2	2	4	
Upper middle income	50.3	0.4	0.6	10	4	..	..	5	7	
Low & middle income	49.4	0.6	0.7	23	16	..	..	2	4	
East Asia & Pacific	48.9	0.7	0.8	28	14	..	1	2	3	
Europe & Central Asia	51.9	0.9	0.9	11	4	..	*–1*	..	9	
Latin America & Carib.	50.4	0.3	0.5	7	2	..	..	4	6	
Middle East & N. Africa	49.0	0.3	0.4	27	23	..	–8	2	3	
South Asia	48.5	0.5	0.5	28	27	..	..	–1	1	
Sub-Saharan Africa	50.5	0.7	0.7	19	16	..	..	3	3	
High income	50.7	0.5	0.7	..	..	..	*0*	6	6	
Europe EMU	51.2	0.5	0.7	..	..	..	*0*	6	7	

a. Data are for the most recent year available.

Gender differences 1.3

About the data

Differences in the opportunities and resources available to men and women exist throughout the world, but they are most prevalent in poor developing countries. This pattern begins at an early age, with boys routinely receiving a larger share of education and health spending than girls do, for example. Inequalities in the allocation of such resources as education, health care, and nutrition matter because of the strong association of these resources with well-being, productivity, and growth. Girls in many developing countries are allowed less education by their families than boys are, and this is reflected in lower female primary school enrollment and higher female illiteracy. As a result women have fewer employment opportunities, especially in the formal sector. Women who do work outside the home often also bear a disproportionate share of the responsibility for household chores and child-rearing.

Life expectancy has increased for both men and women in all regions, but female morbidity and mortality rates sometimes exceed male rates, particularly during early childhood and the reproductive years. In high-income countries women tend to outlive men by six to eight years on average, while in low-income countries the difference is much narrower—about two to three years. The female disadvantage is best reflected in differences in child mortality rates in some countries. Child mortality captures the effect of preferences for boys because adequate nutrition and medical interventions are particularly important for the age group 1–5. Because of the natural female biological advantage, when female child mortality is on par with or higher than male child mortality, there is good reason to believe that girls are discriminated against.

This table contrasts male and female outcomes for selected social indicators: labor force participation, adult illiteracy, net primary school enrollment, life expectancy at birth, and child mortality. For more information on the underlying indicators see *About the data* for tables 2.1 (population), 2.3 (labor force), 2.10 (net primary enrollment), 2.11 (illiteracy), and 2.18 (child mortality and life expectancy at birth). For other gender-related indicators see tables 1.2 (maternal mortality), 2.1 (women per 100 men aged 65 and older), 2.3–2.5 (labor force, employment, and unemployment), 2.11 (educational attainment), 2.12 (pupils and teachers), 2.15 (reproductive health), 2.16 (prevalence of anemia and smoking), and 2.18 (adult mortality).

Definitions

• **Female population** is the percentage of the population that is female. • **Labor force** comprises people who meet the International Labour Organisation definition of the economically active population: all people who supply labor for the production of goods and services during a specified period. It includes both the employed and the unemployed. While national practices vary in the treatment of such groups as the armed forces and seasonal or part-time workers, in general the labor force includes the armed forces, the unemployed, and first-time job-seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector. • **Adult illiteracy rate** is the percentage of adults aged 15 and above who cannot, with understanding, read and write a short, simple statement about their everyday life. • **Net primary enrollment ratio** is the ratio of the number of children of official school age (as defined by the education system) enrolled in school to the number of children of official school age in the population. • **Life expectancy at birth** is the number of years a newborn would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. • **Child mortality rate** is the probability of dying between the ages of one and five, if subject to current age-specific mortality rates.

Data sources

Calculations of gender ratios and differences were carried out by World Bank staff. For the sources of the underlying indicators see *Data sources* for the tables referred to in *About the data.*

1.4 Trends in long-term economic development

	Gross national product		Population		Value added			Private consumption	Gross domestic fixed investment	Exports of goods and services
	average annual % growth		average annual % growth		average annual % growth			average annual % growth	average annual % growth	average annual % growth
	Total 1965–97	Per capita 1965–97	Total 1965–97	Labor force 1965–97	Agriculture 1965–97	Industry 1965–97	Services 1965–97	1965–97	1965–97	1965–97
Albania	..	..	1.8	2.2	*3.2*	*–6.3*	*–1.5*	..	..	..
Algeria	4.0	1.1	2.8	3.2	4.9	2.9	4.2	5.0	*2.4*	2.6
Angola	..	..	2.5	2.1	..	..	..	..	..	..
Argentina	1.8	0.3	1.5	1.5	1.2	0.7	2.7	..	0.9	5.0
Armenia	..	..	1.7	2.4	..	..	..	..	..	..
Australia	3.2	1.7	1.5	2.1	*1.8*	*2.2*	*3.5*	*3.4*	*2.5*	*5.7*
Austria	2.9	2.6	0.3	0.5	*0.8*	*2.0*	*2.6*	*3.0*	*2.9*	*6.3*
Azerbaijan	..	..	1.6	2.0	..	..	..	..	..	..
Bangladesh	3.9	1.4	2.3	2.3	1.9	4.2	4.5	3.7	*3.3*	7.3
Belarus	..	..	0.6	0.7	..	..	..	..	..	..
Belgium	2.5	2.3	0.2	0.5	*1.9*	*2.0*	*2.1*	*2.6*	*1.7*	*5.1*
Benin	3.1	0.1	2.8	2.3	*4.1*	*4.1*	*2.6*	2.5	..	3.2
Bolivia	..	..	2.3	2.4	..	..	..	*2.3*	*4.8*	*5.1*
Bosnia and Herzegovina	..	..	–1.2	–0.9	..	..	..	..	..	..
Botswana	11.4	7.7	3.2	2.9	3.5	*11.3*	*11.2*	..	..	..
Brazil	4.4	2.3	2.1	2.9	3.5	4.7	5.0	4.5	*1.7*	8.5
Bulgaria	*–0.6*	–0.1	0.0	–0.1	*–3.0*	*–1.0*	*2.3*	*–1.0*	*–4.8*	*–12.2*
Burkina Faso	3.2	0.9	2.2	1.7	*2.6*	*2.4*	*5.6*	3.0	*5.8*	3.4
Burundi	3.4	1.1	2.2	2.1	2.7	*4.1*	*3.9*	3.3	*–2.4*	2.4
Cambodia	..	..	1.7	1.7	..	..	..	..	..	..
Cameroon	4.2	1.4	2.7	2.3	3.3	6.7	3.5	3.6	*0.3*	6.2
Canada	3.1	1.8	1.3	2.3	..	..	..	*3.3*	*4.1*	*5.8*
Central African Republic	1.1	–1.2	2.2	..	1.5	2.2	0.8	2.2	*1.5*	1.8
Chad	1.6	–0.8	2.4	2.2	*1.5*	*1.6*	*2.5*	*2.7*	..	1.4
Chile	3.4	1.7	1.7	2.4	4.0	3.1	4.6	3.1	4.5	8.2
China	8.5	6.8	1.7	2.1	4.3	11.1	9.6	7.7	*10.9*	11.5
Hong Kong, China	7.6[a]	5.7[a]	1.8	2.6	..	..	..	8.0	7.7	11.9
Colombia	4.3	2.1	2.2	3.3	3.4	4.4	4.9	4.1	4.8	5.8
Congo, Dem. Rep.	–0.7	–3.7	3.1	2.6	*2.0*	*–3.0*	*–2.2*	0.1	*–0.5*	2.6
Congo, Rep.	4.6	1.7	2.8	2.6	2.8	7.6	4.4	3.8	..	6.6
Costa Rica	4.0	1.1	2.7	3.4	3.2	4.7	4.1	3.2	4.9	6.9
Côte d'Ivoire	2.8	–0.9	3.6	3.3	2.2	6.2	2.9	2.6	0.0	5.3
Croatia	..	..	0.3	0.3	..	..	..	..	..	..
Cuba	..	..	1.1	2.2	..	..	..	..	..	..
Czech Republic	..	..	0.2	0.4	..	..	..	..	..	..
Denmark	2.1	1.9	0.3	0.9	*2.3*	*1.9*	*2.6*	*1.7*	*0.7*	*4.5*
Dominican Republic	4.8	2.3	2.4	3.3	3.0	5.7	5.1	4.3	6.5	7.9
Ecuador	4.7	1.9	2.6	3.1	3.5	6.3	4.6	4.3	3.2	7.3
Egypt, Arab Rep.	5.8	3.4	2.2	2.4	2.8	6.7	8.0	*5.2*	6.0	5.5
El Salvador	1.4	–0.5	2.1	2.9	0.7	0.6	2.1	1.8	2.4	1.1
Eritrea	..	..	2.7	2.5	..	..	..	..	..	..
Estonia	..	..	0.4	0.5	..	..	..	..	..	..
Ethiopia[b]	*2.2*	–0.5	2.7	2.4	*1.8*	*–0.3*	*3.8*	*1.5*	*6.0*	*0.5*
Finland	2.8	2.4	0.4	0.6	*0.2*	*3.0*	*3.4*	*2.8*	*1.2*	*4.8*
France	2.7	2.1	0.6	0.7	*1.8*	*0.9*	*2.7*	*2.9*	*2.0*	*5.6*
Gabon	3.4	0.4	2.6	2.1	*–0.3*	*2.5*	*2.2*	3.7	*–3.3*	5.7
Gambia, The	*4.0*	0.5	3.4	3.2	*1.9*	*4.1*	*4.2*	*1.5*	*9.7*	*3.4*
Georgia	–0.3	–1.0	0.6	0.8	..	..	..	..	..	..
Germany	..	..	0.3	0.4	..	..	..	..	..	..
Ghana	1.8	–0.9	2.6	2.6	1.2	0.6	3.1	1.4	*0.5*	–0.9
Greece	3.1	2.4	0.6	0.9	*1.3*	*3.2*	*4.0*	*3.5*	*1.5*	*7.6*
Guatemala	3.4	0.7	2.6	2.8	2.8	3.6	3.5	3.3	2.3	2.3
Guinea	..	..	2.1	1.8	..	..	..	..	..	..
Guinea-Bissau	*2.9*	0.1	2.4	2.1	*1.5*	*2.7*	*6.7*	*1.2*	..	*2.8*
Haiti	1.1	–0.7	1.9	1.2	0.3	1.4	1.6	*1.8*	*8.6*	3.9
Honduras	3.7	0.5	3.1	3.2	2.6	4.4	4.4	3.8	3.9	2.7

Trends in long-term economic development 1.4

	Gross national product		Population		Value added			Private consumption	Gross domestic fixed investment	Exports of goods and services
	average annual % growth		average annual % growth		average annual % growth			average annual % growth	average annual % growth	average annual % growth
	Total 1965–97	Per capita 1965–97	Total 1965–97	Labor force 1965–97	Agriculture 1965–97	Industry 1965–97	Services 1965–97	1965–97	1965–97	1965–97
Hungary	2.3	2.3	0.0	–0.3	*–1.8*	*–1.6*	*0.7*	*1.1*	2.2	*4.2*
India	4.6	2.3	2.1	2.1	2.8	5.5	5.6	4.1	5.5	6.3
Indonesia	7.0	4.8	2.0	2.7	3.9	9.1	7.9	7.2	*9.2*	5.7
Iran, Islamic Rep.	*1.5*	–1.4	2.8	2.6	*4.6*	*–0.2*	*1.5*	*3.6*	*–1.4*	*–2.2*
Iraq	*–0.3*	..	3.1	2.8	..	..	..	..	..	..
Ireland	3.7	2.8	0.8	0.9	..	..	..	*3.0*	*3.0*	*8.6*
Israel	5.0	2.5	2.6	3.1	..	..	..	5.6	*3.1*	7.1
Italy	2.8	2.5	0.3	0.6	*0.9*	*2.1*	*2.9*	*3.4*	*1.6*	*5.5*
Jamaica	0.8	–0.4	1.2	2.0	0.9	0.0	2.0	1.6	–0.3	1.9
Japan	4.4	3.6	0.8	1.1	*–0.1*	*4.5*	*4.7*	*4.2*	*4.7*	*7.7*
Jordan	*3.9*	–0.4	4.3	4.4	*6.5*	*5.6*	*4.1*	*5.0*	*5.0*	*8.4*
Kazakhstan	..	..	0.9	1.4	..	..	..	..	..	..
Kenya	4.9	1.3	3.4	3.4	3.5	5.7	5.5	4.3	*1.4*	2.8
Korea, Dem. Rep.	..	..	2.0	2.7	..	..	..	..	..	..
Korea, Rep.	8.2	6.7	1.5	2.6	2.0	12.3	8.2	7.4	*12.4*	16.0
Kuwait	*1.1*	–3.0	4.2	4.3	*9.8*	*–4.2*	*6.3*	*7.8*	*8.5*	*–3.0*
Kyrgyz Republic	..	..	1.8	2.0	..	..	..	..	..	..
Lao PDR	..	..	2.2	..	..	..	..	..	..	..
Latvia	1.9	1.5	0.3	0.3	*–3.9*	*–5.7*	*0.4*	..	..	..
Lebanon	..	..	1.9	2.5	..	..	..	..	..	..
Lesotho	5.7	3.2	2.3	2.0	*–1.2*	*13.1*	*5.8*	3.6	*11.6*	5.8
Libya	*1.2*	..	3.6	3.3	*10.3*	*–1.2*	*11.4*	*12.1*	..	*–1.2*
Lithuania	..	..	0.7	0.9	..	..	..	..	..	..
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..
Madagascar	0.7	–1.9	2.6	2.4	*1.5*	*–0.2*	*0.3*	0.2	*1.0*	–0.6
Malawi	3.7	0.5	3.0	2.7	*2.8*	*3.7*	*4.0*	3.0	*–3.4*	3.7
Malaysia	6.8	4.1	2.6	3.1	*3.7*	*8.5*	*7.1*	6.1	10.1	9.7
Mali	*2.9*	0.5	2.4	2.1	3.2	3.1	2.8	*2.5*	*5.1*	7.1
Mauritania	2.4	–0.2	2.5	2.1	1.1	2.5	3.2	3.6	2.3	2.8
Mauritius	5.1	3.8	1.3	2.4	*–0.3*	*7.6*	*6.5*	*5.0*	*4.4*	5.7
Mexico	4.0	1.5	2.4	3.3	2.2	4.5	4.0	3.7	3.8	8.3
Moldova	..	..	0.8	0.7	..	..	..	..	..	..
Mongolia	*2.3*	–0.3	2.6	2.8	..	..	..	..	..	..
Morocco	4.3	2.0	2.2	2.6	2.7	4.1	5.5	4.0	*4.5*	5.1
Mozambique	*1.6*	–0.1	2.2	1.9	..	..	..	*–0.6*	*6.3*	*5.6*
Myanmar	*3.5*	..	1.9	2.0	3.3	4.2	3.4	2.9	5.0	3.8
Namibia	*3.4*	0.7	2.6	2.2	*3.5*	*0.8*	*2.4*	*0.6*	*2.0*	*2.5*
Nepal	3.6	1.0	2.4	2.0	2.3	*8.1*	*5.5*	*3.9*	*6.3*	*8.7*
Netherlands	2.6	1.9	0.7	1.5	*4.1*	*1.3*	*2.5*	*2.7*	*1.3*	*5.0*
New Zealand	1.7	0.7	1.1	2.0	*3.6*	*1.1*	*1.9*	*1.6*	*2.1*	*4.3*
Nicaragua	–0.5	–3.4	3.0	3.6	*–0.1*	*1.2*	*–2.5*	*–1.2*	*0.5*	*0.4*
Niger	0.5	–2.5	3.1	2.8	0.0	5.2	0.2	1.2	*–7.1*	–0.9
Nigeria	3.0	0.0	2.9	2.7	1.5	4.1	4.8	2.4	*0.0*	2.5
Norway	3.5	3.0	0.5	1.3	*1.4*	*3.8*	*2.5*	*2.8*	*1.9*	*5.3*
Oman	*9.7*	5.1	4.0	3.9	..	..	..	..	..	..
Pakistan	5.7	2.7	2.8	3.0	4.0	6.7	6.3	5.1	*4.4*	6.4
Panama	3.0	0.7	2.3	2.9	*2.2*	*2.1*	*2.2*	*3.9*	*2.8*	*2.6*
Papua New Guinea	2.8	0.5	2.3	2.1	2.7	*5.9*	*2.6*	2.7	1.7	7.4
Paraguay	5.2	2.2	2.8	3.0	4.4	5.4	5.8	5.9	*5.4*	8.7
Peru	2.0	–0.4	2.4	2.9	1.6	2.2	2.1	2.0	2.5	1.8
Philippines	3.6	0.9	2.6	2.9	2.4	3.6	4.0	3.7	4.5	6.5
Poland	*1.5*	1.0	0.6	0.6	..	..	..	*1.4*	*2.2*	*6.8*
Portugal	3.6	3.2	0.3	1.0	..	..	..	*3.4*	*3.1*	*5.4*
Puerto Rico	*2.9*	..	1.2	2.1	*1.7*	*4.3*	*3.3*	*2.9*	*0.4*	*4.4*
Romania	*0.0*	–0.2	0.5	0.0	..	..	..	..	..	..
Russian Federation	..	..	0.5	0.7	..	..	..	..	..	..

1.4 Trends in long-term economic development

	Gross national product		Population		Value added			Private consumption	Gross domestic fixed investment	Exports of goods and services
	average annual % growth		average annual % growth		average annual % growth			average annual % growth	average annual % growth	average annual % growth
	Total 1965–97	Per capita 1965–97	Total 1965–97	Labor force 1965–97	Agriculture 1965–97	Industry 1965–97	Services 1965–97	1965–97	1965–97	1965–97
Rwanda	2.8	0.1	2.8	2.8	2.4	2.5	4.4	3.3	6.0	3.3
Saudi Arabia	*5.6*	0.7	4.5	5.0	7.4	3.2	6.9	..	..	..
Senegal	*2.3*	–0.5	2.8	2.6	1.1	3.7	2.4	2.4	3.1	1.5
Sierra Leone	0.6	–1.4	2.1	1.7	3.4	–1.1	0.3	*–1.0*	*–8.4*	*–3.7*
Singapore	8.3	6.3	1.9	3.1	–1.4	8.6	8.3	6.7	9.6	*12.2*
Slovak Republic	..	..	0.6	1.3	..	..	..	..	..	..
Slovenia	..	..	0.6	0.8	..	..	..	..	..	..
South Africa	2.4	0.1	2.2	2.4	2.2	1.7	3.1	3.2	1.5	1.6
Spain	3.0	2.3	0.6	1.0	..	..	..	*2.9*	*2.7*	*7.2*
Sri Lanka	4.6	3.0	1.6	2.2	2.7	4.9	5.3	4.1	7.7	*4.3*
Sudan	2.4	–0.2	2.5	2.6	2.7	3.7	3.5	*4.0*	..	*–2.1*
Sweden	1.8	1.4	0.4	1.0	*0.5*	*1.4*	*2.4*	*1.4*	*1.0*	*4.4*
Switzerland	1.7	1.2	0.6	1.0	..	..	..	*1.8*	*1.9*	*3.8*
Syrian Arab Republic	5.5	2.1	3.2	3.3	*4.4*	*8.4*	*6.3*	*4.7*	*0.6*	*6.3*
Tajikistan	..	..	2.7	2.7	..	..	..	..	..	..
Tanzania	..	..	3.1	2.9	..	..	..	..	..	..
Thailand	7.4	5.1	2.1	2.7	4.0	9.7	7.5	6.3	9.0	11.3
Togo	2.4	–0.6	3.1	2.7	3.5	2.9	1.5	3.0	*1.6*	3.6
Trinidad and Tobago	3.8	2.6	1.2	2.0	*–2.3*	*0.1*	*2.4*	3.9	..	3.5
Tunisia	5.1	2.7	2.2	2.8	3.9	6.1	5.0	5.8	4.4	6.9
Turkey	*4.3*	2.0	2.2	2.2	*1.3*	*5.6*	*5.0*	..	..	..
Turkmenistan	..	..	2.8	3.1	..	..	..	..	..	..
Uganda	..	..	2.9	2.7	..	..	..	..	..	..
Ukraine	..	..	0.3	0.3	..	..	..	..	..	..
United Arab Emirates	*3.8*	–4.0	9.6	10.7	*11.5*	*1.2*	*6.4*	..	..	..
United Kingdom	2.1	1.9	0.3	0.5	..	..	..	*2.5*	*1.8*	*4.0*
United States	2.5	1.5	1.0	1.6	..	..	..	*3.0*	*2.3*	*5.5*
Uruguay	1.7	1.2	0.6	1.0	1.5	1.2	2.3	1.6	1.9	5.9
Uzbekistan	..	..	2.6	2.8	..	..	..	..	..	..
Venezuela	*2.0*	–0.9	2.9	3.8	2.7	1.6	2.7	*2.5*	1.9	*1.7*
Vietnam	..	..	2.2	2.2	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	3.2	2.8	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	0.7	0.8	..	..	..	..	..	..
Zambia	1.0	–2.0	3.0	2.7	1.0	0.1	2.1	0.6	*–5.9*	–0.8
Zimbabwe	3.6	0.5	2.9	2.9	*2.0*	*1.3*	*4.5*	4.1	*2.9*	*6.3*
World	**3.2 w**	**1.4 w**	**1.8 w**	**2.0 w**	**2.2 w**	**.. w**	**.. w**	**3.4 w**	**3.2 w**	**5.7 w**
Low income	3.8	1.4	2.4	2.3	2.5	4.5	4.7	3.5	3.9	4.2
Middle income	4.0	2.2	1.7	2.1	3.0	4.1	4.6	3.4	2.1	5.8
Lower middle income	4.7	3.0	1.7	2.1	3.4	5.8	5.0	5.0	3.8	4.0
Upper middle income	3.6	1.5	1.9	2.3	2.5	3.2	4.2	2.3	1.9	6.9
Low & middle income	3.9	1.9	2.0	2.2	2.9	4.1	4.6	3.6	2.4	5.8
East Asia & Pacific	7.3	5.4	1.8	2.2	4.0	9.5	7.8	6.7	9.7	9.0
Europe & Central Asia	..	..	0.8	0.9	..	..	..	..	..	..
Latin America & Carib.	3.5	1.3	2.1	2.8	2.6	3.2	3.9	3.9	1.8	5.6
Middle East & N. Africa	3.0	0.1	2.8	2.8	4.5	1.2	4.2	..	..	..
South Asia	4.6	2.3	2.2	2.2	2.8	5.5	5.6	4.2	5.1	6.3
Sub-Saharan Africa	2.6	–0.2	2.8	2.6	1.9	2.3	3.2	2.7	–0.3	2.4
High income	3.1	2.3	0.8	1.2	..	..	..	3.3	3.1	5.9
Europe EMU	..	..	0.4	0.7	..	..	..	..	..	5.5

a. Data refer to GDP. b. Data for GNP and its components prior to 1992 include Eritrea.

Trends in long-term economic development 1.4

About the data

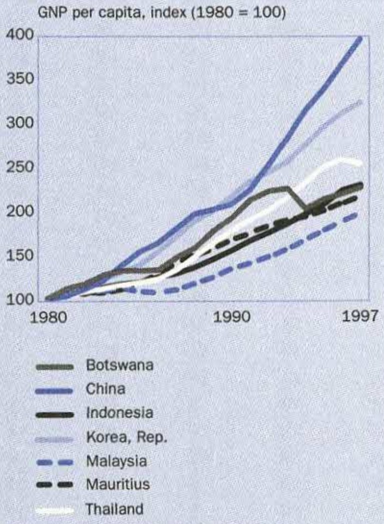
The long-term trends shown in this table provide a view of the relative rates of change of key social and economic indicators over the past 32 years. In viewing these growth rates, it may be helpful to keep in mind that a quantity growing at 2.3 percent a year will double in 30 years, while a quantity growing at 7 percent a year will double in 10 years. But like all averages, the rates reflect the general tendency and may disguise considerable year-to-year variation, especially for economic indicators.

Average annual growth rates of gross national product, value added, private consumption, gross domestic fixed investment, and exports of goods and services are calculated from data in 1995 constant prices using the least-squares method. See *Statistical methods* for more information on the calculation of growth rates.

All the indicators shown here appear elsewhere in the *World Development Indicators*. For more information about them, see *About the data* for tables 1.1 (gross national product and GNP per capita), 2.1 (population), 2.3 (labor force), 4.2 (value added by industrial origin), 4.9 (exports of goods and services), and 4.10 (private consumption and gross domestic fixed investment).

Figure 1.4

Botswana and Mauritius are growing as fast as East Asian economies



Source: World Bank staff estimates.

Botswana and Mauritius are the only two countries in Sub-Saharan Africa whose per capita growth rates approach those of the East Asian countries.

Definitions

• **Gross national product** is the sum of value added by all resident producers plus any taxes (less subsidies) that are not included in the valuation of output plus net receipts of primary income (employee compensation and property income) from nonresident sources. Growth is calculated from constant price GNP in national currency units. • **GNP per capita** is gross national product divided by midyear population. • **Average annual growth of total population and labor force** is calculated using the exponential endpoint method. • **Labor force** comprises all people who meet the International Labour Organisation's definition of the economically active population. • **Value added** is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The industrial origin of value added is determined by the International Standard Industrial Classification (ISIC) revision 2. • **Agriculture** is the value added of ISIC major divisions 1–5. • **Industry** is the value added of ISIC divisions 10–15. • **Services** are the value added of ISIC divisions 15–37. • **Private consumption** is the market value of all goods and services, including durable products, purchased or received as income in kind by households and nonprofit institutions. It excludes purchases of dwellings but includes imputed rent for owner-occupied dwellings. • **Gross domestic fixed investment** consists of outlays or additions to fixed assets of the economy plus net changes in inventory. • **Exports of goods and services** are the value of all goods and market services provided to the rest of the world.

Data sources

The indicators here and throughout the rest of the book have been compiled by World Bank staff from primary and secondary sources. More information about the indicators and their sources can be found in the *About the data*, *Definitions*, and *Data sources* entries that accompany each table in subsequent sections.

1.5 Long-term structural change

	Agriculture value added		Labor force in agriculture		Urban population		Trade		Central government revenue		Money and quasi money	
	% of GDP		% of total labor force		% of total population		% of GDP		% of GDP		% of GDP	
	1970	**1997**	**1970**	**1990**	**1970**	**1997**	**1970**	**1997**	**1970**	**1997**	**1970**	**1997**
Albania	..	63	66	55	32	38	..	49	..	*21*	..	52
Algeria	11	11	47	26	40	57	51	54	..	*33*	51	37
Angola	..	9	78	75	15	32	..	133	..	..	..	..
Argentina	10	7	16	12	78	89	10	20	..	12	21	21
Armenia	..	41	27	18	59	69	..	79	..	..	..	8
Australia	6	*3*	8	6	85	85	29	*40*	21	25	44	65
Austria	..	*1*	15	8	65	64	60	*82*	28	*37*	53	89
Azerbaijan	..	22	35	31	50	56	..	56	..	..	..	10
Bangladesh	37	24	81	65	8	19	15	31	..	..	..	29
Belarus	..	14	35	20	44	72	..	123	..	*32*	..	12
Belgium	3	*1*	5	3	94	97	100	*132*	35	*44*	44	83
Benin	36	38	81	64	17	40	50	57	..	..	10	23
Bolivia	..	16	55	47	41	62	..	50	..	17	..	44
Bosnia and Herzegovina	..	..	50	11	27	42	..	..	..	..	..	..
Botswana	28	3	82	46	8	65	71	94	*20*	*49*	..	20
Brazil	12	8	45	23	56	80	14	18	..	..	17	27
Bulgaria	..	23	35	13	52	69	..	117	..	32	..	20
Burkina Faso	35	35	92	92	6	17	23	44	..	..	8	23
Burundi	71	53	94	92	2	8	22	24	..	14	9	19
Cambodia	..	51	79	74	12	22	14	72	..	..	..	11
Cameroon	31	41	85	70	20	46	51	49	..	*13*	14	13
Canada	5	..	8	3	76	77	43	*75*	*19*	..	36	62
Central African Republic	35	54	89	80	30	40	73	44	..	..	15	20
Chad	40	39	92	83	12	23	38	52	*8*	..	7	12
Chile	7	7	24	19	75	84	29	56	*29*	23	12	40
China	35	19	78	72	17	32	5	41	..	*5*	..	112
Hong Kong, China	..	*0*	4	1	88	95	181	267	..	..	..	206
Colombia	25	11	41	27	57	74	30	33	*11*	..	18	22
Congo, Dem. Rep.	15	58	75	68	30	29	35	46	*11*	*5*	8	*4*
Congo, Rep.	18	10	66	49	33	60	93	145	22	..	17	14
Costa Rica	23	15	43	26	40	50	63	93	*15*	*27*	19	39
Côte d'Ivoire	32	27	76	60	27	45	65	86	..	..	25	26
Croatia	..	*12*	50	16	40	57	..	*95*	..	*45*	..	*29*
Cuba	..	..	30	18	60	77	..	..	..	..	..	..
Czech Republic	..	..	17	11	52	66	..	121	..	34	..	71
Denmark	6	*4*	11	6	80	85	60	*66*	34	*39*	44	57
Dominican Republic	23	12	48	25	40	63	42	99	*18*	*15*	17	25
Ecuador	24	12	51	33	40	60	33	59	..	..	20	30
Egypt, Arab Rep.	29	18	52	40	42	45	33	45	..	*35*	34	74
El Salvador	..	13	57	36	39	46	49	59	*11*	..	20	41
Eritrea	..	9	86	80	11	18	..	120	..	..	..	..
Estonia	..	7	18	14	65	74	..	166	..	33	..	26
Ethiopia	..	55	91	86	9	16	..	42	..	..	..	41
Finland	12	*4*	20	8	50	64	53	*67*	*26*	*33*	40	51
France	..	*2*	14	5	71	75	31	*45*	*33*	42	41	69
Gabon	19	7	79	52	25	52	88	106	..	..	15	15
Gambia, The	34	30	87	82	15	30	79	108	*16*	..	17	26
Georgia	..	32	37	26	47	59	..	35	..	7	..	..
Germany	..	*1*	9	4	80	87	..	*47*	..	32	..	66
Ghana	47	36	60	59	29	37	44	62	*15*	..	18	16
Greece	15	*11*	42	23	53	60	23	*39*	*22*	*22*	34	*45*
Guatemala	27	24	62	52	36	40	36	42	*9*	..	17	*22*
Guinea	..	23	92	87	14	31	..	39	..	..	..	9
Guinea-Bissau	47	54	89	85	15	23	34	61	..	..	..	*13*
Haiti	..	30	74	68	20	33	31	31	..	..	12	29
Honduras	32	20	65	41	29	45	62	85	12	..	19	32

Long-term structural change 1.5

	Agriculture value added		Labor force in agriculture		Urban population		Trade		Central government revenue		Money and quasi money	
	% of GDP		% of total labor force		% of total population		% of GDP		% of GDP		% of GDP	
	1970	**1997**	**1970**	**1990**	**1970**	**1997**	**1970**	**1997**	**1970**	**1997**	**1970**	**1997**
Hungary	..	6	25	15	49	66	63	91	..	37	..	*39*
India	45	25	71	64	20	27	8	27	..	14	22	48
Indonesia	45	16	66	55	17	37	28	56	*13*	*17*	8	50
Iran, Islamic Rep.	..	*25*	44	39	42	60	..	*36*	..	*24*	..	*35*
Iraq	..	..	47	16	56	75	..	..	..	..	22	..
Ireland	..	*6*	26	14	52	58	79	*138*	30	*34*	54	*49*
Israel	..	..	10	4	84	91	79	76	*33*	43	47	81
Italy	8	*3*	19	9	64	67	33	*48*	..	45	73	56
Jamaica	7	8	33	25	42	55	71	115	..	..	30	46
Japan	6	*2*	20	7	71	78	20	*19*	11	..	69	112
Jordan	12	3	28	15	51	73	..	125	..	*29*	54	99
Kazakhstan	..	12	27	22	50	60	..	73	..	..	..	9
Kenya	33	29	86	80	10	30	60	66	*17*	*27*	27	43
Korea, Dem. Rep.	..	..	55	38	54	62	..	..	..	..	..	..
Korea, Rep.	27	6	49	18	41	83	38	77	15	22	29	45
Kuwait	0	*0*	2	1	78	97	84	93	*42*	..	36	81
Kyrgyz Republic	..	45	36	32	37	39	..	84	..	..	..	..
Lao PDR	..	52	81	78	10	22	..	65	..	..	..	15
Latvia	..	7	19	16	62	73	..	111	..	32	..	24
Lebanon	..	12	20	7	59	88	..	64	..	*17*	..	138
Lesotho	35	11	43	40	9	26	65	160	*20*	38	..	32
Libya	2	..	29	11	45	86	89	..	..	..	20	..
Lithuania	..	13	31	18	50	73	..	120	..	26	..	16
Macedonia, FYR	..	12	50	22	47	61	..	96	..	..	..	..
Madagascar	24	32	84	78	14	28	41	52	*14*	*9*	17	19
Malawi	44	36	91	87	6	14	63	59	*16*	..	18	14
Malaysia	29	12	54	27	34	55	80	187	*20*	23	31	97
Mali	66	49	93	86	14	28	33	61	..	..	14	22
Mauritania	29	25	84	55	14	54	74	88	..	..	9	15
Mauritius	16	9	34	17	42	41	85	127	..	21	35	73
Mexico	12	5	44	28	59	74	15	60	*10*	*15*	14	25
Moldova	..	31	54	33	32	53	..	129	..	..	..	19
Mongolia	..	37	48	32	45	62	..	114	..	*24*	..	21
Morocco	20	15	58	45	35	53	39	60	19	*28*	28	65
Mozambique	..	31	86	83	6	36	..	52	..	..	..	24
Myanmar	38	59	78	73	23	27	14	2	..	*7*	24	25
Namibia	..	11	64	49	19	38	..	111	..	..	..	41
Nepal	67	41	94	83	4	11	13	64	*5*	11	11	36
Netherlands	..	*3*	7	5	86	89	89	*101*	..	46	55	83
New Zealand	*12*	..	12	10	81	86	48	57	28	34	20	85
Nicaragua	25	*34*	50	28	47	63	56	*106*	12	*25*	14	*37*
Niger	65	38	93	90	9	19	29	40	..	..	5	10
Nigeria	41	33	71	43	20	41	20	75	*10*	..	9	12
Norway	..	*2*	12	6	65	74	74	*73*	*32*	*42*	49	52
Oman	16	..	57	45	11	79	93	..	*38*	*32*	..	*31*
Pakistan	37	25	59	52	25	35	22	37	..	16	41	45
Panama	..	*8*	42	26	48	56	..	*185*	..	*26*	22	*65*
Papua New Guinea	37	28	86	79	10	17	72	116	..	..	..	39
Paraguay	32	23	53	39	37	54	31	46	*11*	..	17	28
Peru	19	7	48	36	57	72	34	29	14	16	18	23
Philippines	30	19	58	46	33	56	43	108	*13*	19	23	55
Poland	..	*6*	39	27	52	64	..	57	..	39	..	35
Portugal	..	*4*	32	18	26	37	50	*69*	..	*34*	76	94
Puerto Rico	3	..	14	4	58	74	107	..	..	..	..	..
Romania	..	20	49	24	42	57	..	66	..	*28*	..	19
Russian Federation	..	8	19	14	62	77	..	43	..	*19*	..	16

1.5 Long-term structural change

	Agriculture value added		Labor force in agriculture		Urban population		Trade		Central government revenue		Money and quasi money	
	% of GDP		% of total labor force		% of total population		% of GDP		% of GDP		% of GDP	
	1970	1997	1970	1990	1970	1997	1970	1997	1970	1997	1970	1997
Rwanda	66	37	94	92	3	6	27	30	..	..	11	14
Saudi Arabia	4	6	64	19	49	84	89	76	..	..	13	51
Senegal	24	18	83	77	33	45	56	71	16	..	14	21
Sierra Leone	30	50	76	67	18	35	48	31	..	11	13	13
Singapore	2	0	3	0	100	100	232	*358*	21	24	62	82
Slovak Republic	..	5	17	12	41	60	..	120	..	..	..	65
Slovenia	..	5	50	6	37	52	..	116	..	..	..	38
South Africa	8	5	31	14	48	50	48	54	*21*	30	60	57
Spain	..	*3*	26	12	66	77	27	*50*	18	*30*	69	75
Sri Lanka	28	*22*	55	48	22	23	54	80	20	19	22	30
Sudan	44	..	77	69	16	33	33	..	*17*	..	17	8
Sweden	..	..	..	..	81	83	48	*73*	29	42	..	..
Switzerland	..	..	8	6	54	62	64	*68*	14	*23*	100	140
Syrian Arab Republic	20	..	50	33	43	53	39	70	*25*	*23*	35	35
Tajikistan	..	..	46	41	37	32	..	*228*	..	..	..	..
Tanzania	..	47[a]	90	84	7	26	..	*58*[a]	..	..	..	21
Thailand	26	11	80	64	13	21	34	93	*12*	18	27	84
Togo	34	42	74	66	13	32	88	69	..	..	17	22
Trinidad and Tobago	5	2	19	11	63	73	84	106	..	*27*	27	46
Tunisia	17	13	42	28	45	63	47	90	*23*	*30*	32	46
Turkey	40	15	71	53	38	72	10	55	14	*18*	20	28
Turkmenistan	..	..	38	37	48	45	..	..	..	..	..	7
Uganda	54	44	90	85	8	13	43	33	*14*	..	17	11
Ukraine	..	12	31	20	55	71	..	85	..	..	..	12
United Arab Emirates	..	..	9	8	57	85	..	..	..	..	..	*54*
United Kingdom	3	*2*	3	2	88	89	45	*60*	37	*36*	..	..
United States	3	*2*	4	3	74	77	11	*25*	*18*	21	63	59
Uruguay	18	8	19	14	82	91	30	45	*24*	30	21	38
Uzbekistan	..	31	44	35	37	42	..	*76*	..	..	..	..
Venezuela	6	4	26	12	72	86	38	50	17	24	19	18
Vietnam	..	26	77	71	18	20	..	100	..	..	..	22
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	18	70	61	13	35	..	96	..	38	..	38
Yugoslavia, FR (Serb./Mont.)	..	..	50	30	39	58	..	..	..	..	..	..
Zambia	11	16	79	75	30	44	90	71	*22*	*19*	25	16
Zimbabwe	17	19	77	68	17	33	..	79	..	..	..	25
World	9 w	*4* w	55 w	49 w	37 w	46 w	28 w	*42* w	*18* w	*27* w		
Low income	42	28	74	66	19	28	18	40	..	*14*		
Middle income	21	11	61	53	33	49	25	50	..	*18*		
Lower middle income	32	15	65	58	28	42	21	56	..	*15*		
Upper middle income	13	8	41	25	55	74	27	45	*7*	..		
Low & middle income	23	13	66	58	28	40	24	49	..	*17*		
East Asia & Pacific	35	18	76	69	19	33	20	64	..	*11*		
Europe & Central Asia	..	12	33	23	52	67	..	64	..	*25*		
Latin America & Carib.	12	8	41	25	57	74	19	31	1	..		
Middle East & N. Africa	13	*14*	50	35	41	58	65	*64*	..	..		
South Asia	43	25	71	63	19	27	12	31	..	15		
Sub-Saharan Africa	21	18	78	68	19	32	48	64	*19*	..		
High income	5	*2*	13	6	72	76	29	*41*	*19*	*29*		
Europe EMU	..	*2*	15	7	71	77	..	*57*	..	38		

a. Data for GDP and its components refer to mainland Tanzania only.

Long-term structural change 1.5

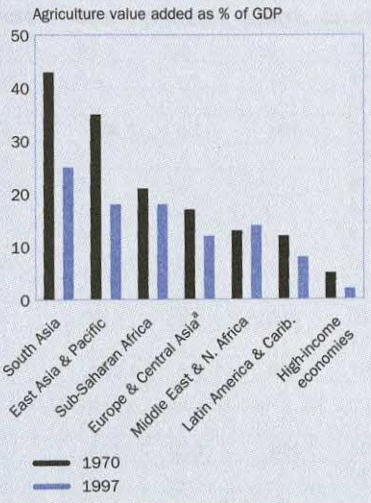
About the data

Over a period of 25 years or longer, cumulative processes of change reshape an economy and the social order built on that economy. This table highlights some of the notable trends that have been at work for much of the 20th century: the shift of production from agriculture to manufacturing and services; the reduction of the agricultural labor force and the growth of urban centers; the expansion of trade; the increasing size of the central government in most countries—and the reversal of this trend in some; and the monetization of economies that have achieved stable macroeconomic management.

All the indicators shown here appear elsewhere in the *World Development Indicators*. For more information about them, see tables 2.4 (labor force in agriculture), 3.10 (urban population), 4.2 (agriculture value added), 4.13 (central government revenue), 4.16 (money and quasi money), and 6.1 (trade).

Figure 1.5

Agriculture loses ground



a. Data refer to 1989 and 1997.
Source: World Bank staff estimates.

The share of agriculture value added in GDP has declined in all regions except the Middle East and North Africa.

Definitions

- **Agriculture value added** is the sum of outputs of the agricultural sector (International Standard Industrial Classification major divisions 1–5) less the cost of intermediate inputs, measured as a share of gross domestic product (GDP). • **Labor force in agriculture** is the percentage of the total labor force recorded as working in agriculture, hunting, forestry, and fishing (ISIC major divisions 1–5). • **Urban population** is the share of the total population living in areas defined as urban in each country. • **Trade** is the sum of exports and imports of goods and services, measured as a share of GDP. • **Central government revenue** includes all revenue to the central government from taxes and nonrepayable receipts (other than grants), measured as a share of GDP.
- **Money and quasi money** comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This measure of the money supply is commonly called M2.

Data sources

The indicators here and throughout the rest of the book have been compiled by World Bank staff from primary and secondary sources. More information about the indicators and their sources can be found in the *About the data, Definitions,* and *Data sources* entries that accompany each table in subsequent sections.

1.6 Key indicators for other economies

	Population	Surface area	Population density	Gross national product						Life expectancy at birth	Adult illiteracy rate	Carbon dioxide emissions
						Per capita						
	thousands 1997	thousand sq. km 1996	people per sq. km 1997	$ millions 1997[a]	average annual growth % 1996–97	$ 1997[a]	average annual growth % 1996–97	PPP $ millions 1997[b]	PPP per capita $ 1997[b]	years 1997	% of people 15 and above 1997	thousand metric tons 1996
Afghanistan	24,965	652.1	37	..	..	..[c]	..	..	..	45	67	1,176
American Samoa	62	0.2	298	..	..	..[d]	..	..	..	..	..	282
Andorra	64	0.2	142	..	..	..[e]	..	..	..	..	..	..
Antigua and Barbuda	66	0.4	149	489	1.5	7,380	0.7	573	8,650	75	..	322
Aruba	89	0.2	452	..	..	..[e]	..	..	..	..	..	1,517
Bahamas, The	289	13.9	28	..	..	..[e]	..	..	..	74	4	1,707
Bahrain	620	0.7	868	..	..	..[d]	..	..	..	73	14	10,578
Barbados	265	0.4	615	..	..	..[d]	..	..	..	76	..	835
Belize	230	23.0	10	614	2.4	2,670	–0.7	936	4,080	75	..	355
Bermuda	63	0.1	1,242	..	..	..[e]	..	..	..	..	..	462
Bhutan	737	47.0	15	315	7.0	430	4.9	..	..	61	..	260
Brunei	308	5.8	57	..	..	..[e]	..	..	..	76	10	5,071
Cape Verde	401	4.0	97	436	3.8	1,090	1.9	1,184[f]	2,950[f]	68	29	121
Cayman Islands	36	0.3	..	..	..	..[e]	..	..	..	..	..	282
Channel Islands	148	..	..	..	..	..[e]	..	..	..	78	..	..
Comoros	518	2.2	226	209	0.6	400	–2.4	792[f]	1,530[f]	60	45	55
Cyprus	747	9.3	80	..	..	..[e]	..	..	..	78	4	5,379
Djibouti	636	23.2	27	..	..	..[g]	..	..	..	50	..	366
Dominica	74	0.8	98	225	2.7	3,040	2.4	297	4,020	76	..	81
Equatorial Guinea	420	28.1	15	444	129.4	1,060	125.5	..	..	50	20	143
Faeroe Islands	44	1.4	..	..	..	..[e]	..	..	..	..	..	630
Fiji	815	18.3	44	2,007	–0.3	2,460	–2.0	3,145	3,860	73	8	762
French Guiana	157	90.0	..	..	..	..[e]	..	..	..	..	..	920
French Polynesia	224	4.0	60	..	..	..[e]	..	..	..	72	..	561
Greenland	56	341.7	0	..	..	..[e]	..	..	..	..	..	509
Grenada	96	0.3	279	300	4.9	3,140	4.3	455	4,760	72	..	161
Guadeloupe	427	1.7	250	..	..	..[d]	..	..	..	77	..	1,513
Guam	146	0.6	263	..	..	..[e]	..	..	..	77	..	4,078
Guyana	848	215.0	4	677	7.1	800	6.7	2,376	2,800	64	2	953
Iceland	271	103.0	3	..	..	..[e]	..	..	..	79	..	2,195
Isle of Man	76	0.6	..	..	..	..[d]	..	..	..	..	..	..

About the data

This table shows data for 62 economies—small economies with populations between 30,000 and 1 million, smaller economies if they are members of the World Bank, and larger economies for which data are not regularly reported. Where data on GNP per capita are not available, the estimated range is given.

Definitions

• **Population** is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. Refugees not permanently settled in the country of asylum are generally considered part of the population of the country of origin. The values shown are midyear estimates for 1997. See also table 2.1. • **Surface area** is a country's total area including areas under inland bodies of water and some coastal waterways. • **Population density** is midyear population divided by land area in square kilometers. • **Gross national product** (GNP) is the sum of value added by all resident producers plus any taxes (less subsidies) that are not included in the valuation of output plus net receipts of primary income (employee compensation and property

Key indicators for other economies 1.6

	Population	Surface area	Population density	Gross national product						Life expectancy at birth	Adult illiteracy rate	Carbon dioxide emissions
						Per capita						
	thousands 1997	thousand sq. km 1996	people per sq. km 1997	$ millions 1997[a]	average annual growth % 1996–97	$ 1997[a]	average annual growth % 1996–97	PPP $ millions 1997[b]	PPP per capita $ 1997[b]	years 1997	% of people 15 and above 1997	thousand metric tons 1996
Kiribati	83	0.7	112	76	1.4	910	–1.1	..	..	60	..	22
Liberia	2,886	111.4	29	..	..	..[c]	..	..	..	47	52	326
Liechtenstein	31	0.2	..	..	..	..[e]	..	..	..	..	..	..
Luxembourg	422	2.6	..	..	..	..[e]	..	..	..	76	..	8,281
Macao	448	0.0	21,961	..	..	..[e]	..	..	..	78	8	1,407
Maldives	256	0.3	831	301	8.5	1,180	6.3	855	3,340	67	4	297
Malta	375	0.3	1,166	3,498	4.8	9,330	4.2	5,018	13,380	77	9	1,751
Marshall Islands	60	0.2	..	97	..	1,610	..	..	..	..	..	..
Martinique	393	1.1	367	..	..	..[e]	..	..	..	79	3	2,023
Mayotte	*108*	0.3	..	..	..	..[d]	..	..	..	..	..	..
Micronesia, Fed. Sts.	111	0.7	..	213	–3.9	1,920	–5.4	..	..	67	..	..
Monaco	32	0.0	..	..	..	..[e]	..	..	..	..	..	..
Netherlands Antilles	210	1.0	260	..	..	..[e]	..	..	..	75	4	6,430
New Caledonia	202	18.6	11	..	..	..[e]	..	..	..	73	..	1,751
Northern Mariana Islands	54	0.5	..	..	..	..[e]	..	..	..	..	..	..
Palau	17	0.5	..	..	..	..[d]	..	..	..	..	..	245
Qatar	721	11.0	63	..	..	..[e]	..	..	..	74	20	29,121
Réunion	678	2.5	267	..	..	..[e]	..	..	..	75	14	1,561
Samoa	174	2.8	61	199	–0.5	1,140	–1.7	622	3,570	69	..	132
São Tomé and Principe	138	1.0	141	40	–7.0	290	–9.4	..	..	64	..	77
Seychelles	78	0.5	170	537	3.8	6,910	2.4	..	..	71	..	169
Solomon Islands	403	28.9	14	350	2.6	870	0.0	915[f]	2,270[f]	70	..	161
Somalia	8,775	637.7	14	..	..	..[c]	..	..	..	47	..	15
St. Kitts and Nevis	41	0.4	114	256	7.4	6,260	7.6	317	7,770	70	..	103
St. Lucia	159	0.6	259	558	1.9	3,510	1.2	800	5,030	70	..	191
St. Vincent and the Grenadines	112	0.4	286	272	3.0	2,420	2.5	456	4,060	73	..	125
Suriname	412	163.3	3	544	25.7	1,320	25.7	..	..	70	..	2,099
Swaziland	958	17.4	54	1,458	7.1	1,520	3.4	3,536	3,690	60	23	341
Tonga	98	0.8	135	177	2.2	1,810	1.7	..	..	70	..	117
Vanuatu	177	12.2	14	238	3.9	1,340	1.5	572[f]	3,230[f]	65	..	62
Virgin Islands (U.S.)	117	0.3	339	..	..	..[e]	..	..	..	77	..	12,912

a. Calculated using the World Bank Atlas method. b. PPP is purchasing power parity. See *Definitions*. c. Estimated to be low income ($785 or less). d. Estimated to be upper middle income ($3,126 to $9,655). e. Estimated to be high income ($9,656 or more). f. The estimate is based on regression; others are extrapolated from the latest International Comparison Programme benchmark estimates. g. Estimated to be lower middle income ($786 to $3,125).

income) from nonresident sources. Data are in current U.S. dollars converted using the World Bank Atlas method (see *Statistical methods*). Growth is calculated from constant price GNP in national currency units. • **GNP per capita** is gross national product divided by midyear population. GNP per capita in U.S. dollars is converted using the World Bank Atlas method. Growth is calculated from constant price GNP per capita in national currency units. • **GNP in PPP terms** is gross national product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNP as a U.S. dollar in the United States. • **Life expectancy at birth** is the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. • **Adult illiteracy rate** is the percentage of adults aged 15 and above who cannot, with understanding, read and write a short, simple statement about their everyday life. • **Carbon dioxide emissions** are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid fuels, liquid fuels, gas fuels, and gas flaring.

Data sources

The indicators here and throughout the rest of the book have been compiled by World Bank staff from primary and secondary sources. More information about the indicators and their sources can be found in the *About the data*, *Definitions*, and *Data sources* entries that accompany each table in subsequent sections.

PEOPLE

Education has long been viewed as a key to social and economic development, but the insights of human capital theory beginning in the 1960s helped to provide a new understanding of education as a form of investment in a particularly durable if intangible asset. Education was seen to be the principal means of increasing the quantity and quality of human capital available in the economy. Studies found social and private returns to investments in education to be comparable to, or higher than, returns to investments in physical capital. In recent years new theories of growth have emphasized the importance of the accumulation of knowledge in fostering technological change and thus in achieving faster and sustained economic growth. And the experience of developing countries has shown that education helps to reduce poverty and to strengthen the civil institutions that support sound economic and social policies.[1]

But many developing countries still face unprecedented social problems. Nearly a billion people will enter the 21st century unable to read or write—much less operate a computer or work with other complex technologies. They will continue to be poorer and sicker than those who are literate (UNICEF, *The State of the World's Children 1999*). And their numbers are growing. Education thus remains a priority sector for countries striving to meet these challenges. The target is receding, however, because today's political, economic, and technological developments are having a profound impact on the kinds of education needed to meet the challenges of the coming century. Countries able to benefit from technological advances and learning opportunities have a distinct advantage over those with limited educational opportunities. New technologies promise high rewards to those who possess more advanced skills, while limiting the opportunities of those who do not.

Education for all? Not yet

In 1990 five international agencies—the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the United Nations Population Fund (UNFPA), and the World Bank—sponsored a landmark international meeting in Jomtien, Thailand: the World Conference on Education for All. Two goals recommended by the conference—universal primary education and gender equality of enrollments in primary and secondary education—were included in the core set of international development goals proposed in *Shaping the 21st Century* (OECD 1996c) and have been adopted by many organizations, including the World Bank.

The Education for All conference recognized the need to prepare young people to lead productive lives in rapidly changing societies. This was reflected in its "expanded vision," focusing not only on enrollment levels, but also on learning outcomes, vocational training, and essential skills and knowledge (WCEFA Inter-Agency Commission 1990). But progress since Jomtien has been modest, and many countries will fail to meet its targets. The cost to countries that fail to keep up may be substantial, and the burden will fall hardest on the young and the poor.

Universal primary education is the first important step toward improving education outcomes. Remedial efforts and adult education programs can help to correct past deficiencies, but a general improvement in education levels must begin with a basic education. Reaching this goal requires improvements along three dimensions:

- Access and participation, measured by net primary enrollment.
- Retention in school, measured by progression to grade 5.
- Achievement, measured by the literacy rate of 15- to 24-year-olds.

Expanding access

Developing countries have made enormous progress in expanding access to schooling, enrolling more children than ever before. Between 1960 and 1992 the share of 6- to 11-year-olds enrolled rose from less than half to 77 percent, although recently the rate of growth has slowed considerably. In the same period the share of 12- to 17-year-olds in school more than doubled (from 21 percent to 47 percent), and for 18- to 23-year-olds it more than tripled (from 4 percent to 14 percent) (World Bank 1998c).

This is good news, but regional enrollment ratios show large variations (table 2.10). East Asia has achieved universal primary enrollment, and Latin America and Eastern Europe are nearing full primary enrollment. But Sub-Saharan Africa experienced no increases in enrollment ratios between 1980 and 1996. Although reasons for this stagnation have not been established, high fertility rates leading to rapid growth in school-age populations are a driving force (table 2.15; figure 2a). In many countries the school-age population is growing faster than enrollments.

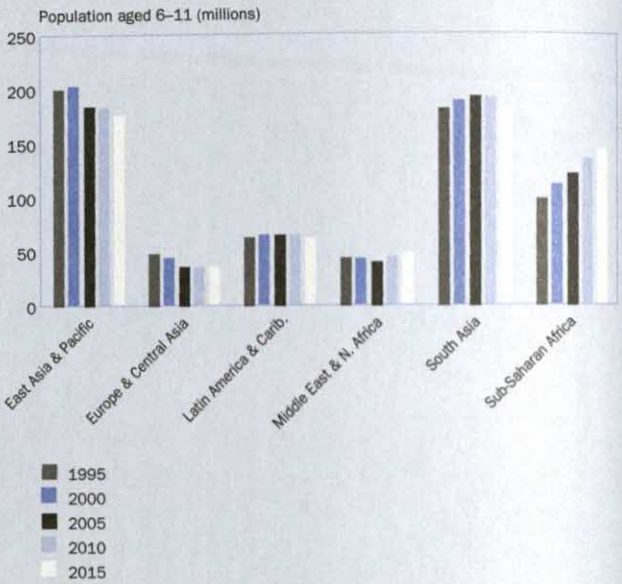
Keeping students in school

Despite the overall success of many developing countries in providing access to schooling, only two-thirds of the children who start primary school are still there five years later (World Bank 1998c). Again, there are large regional differences. More than half the countries with data in Latin America have completion rates above 80 percent, while many African countries experienced declines between 1980 and 1996 (table 2.11).

Low completion rates result from high repetition and dropout rates. The two are closely linked: repetition often leads to dropout. On the supply side, low completion rates may reflect problems with the quality of education. Filmer and Pritchett (1998) note that the most important shortfall in primary enrollments is caused by children who complete grade 1 but fail to complete primary school. This suggests that issues of school quality, rather than access to school facilities, may influence the decision to continue. On the demand side, families may withdraw children, especially girls, from school for their labor.

Figure 2a

High fertility is driving rapid growth in the school-age population in some regions



Source: World Bank staff estimates.

Enhancing achievement

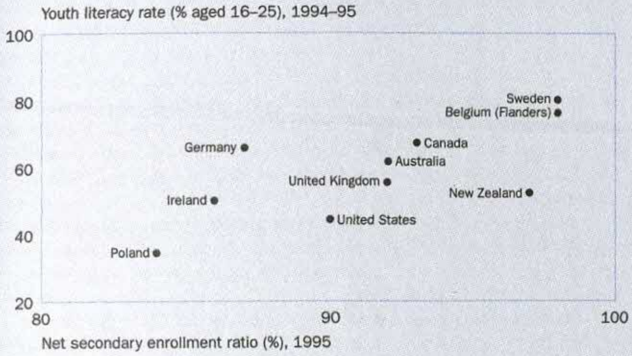
The low primary completion rates mean that in many countries the formal education system is failing to provide basic, functional literacy for many children. But attendance alone does not guarantee adequate achievement. Even in high-income countries with full enrollments in basic education programs and low repetition and dropout rates, achievement levels vary widely and can be surprisingly low (figure 2b). Although all these countries have net secondary enrollment ratios above 80 percent, functional literacy rates for 16- to 25-year-olds range from 35 to 80 percent. Comparable data are not yet available for many developing countries, but in those where data are available test scores were lower than the international mean for all countries compared—in some cases by more than one standard deviation (World Bank 1995d).

Assuring gender equity

The other important goal is to ensure gender parity in education. Several indicators—including enrollment, literacy rates, and years of schooling (tables 1.2 and 2.11)—reveal that the level of female education in many poor countries is low. They also suggest that the environment within which education decisions are made

Figure 2b

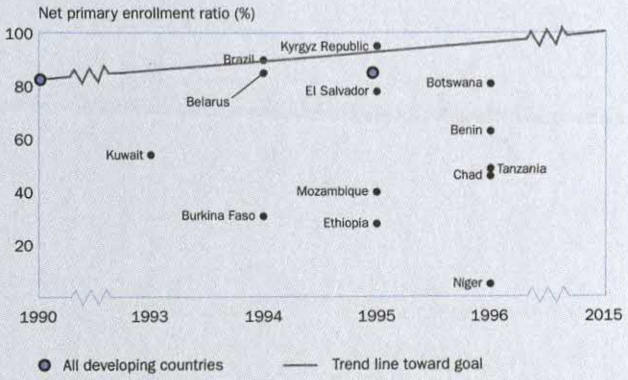
High enrollments are no guarantee of high achievement



Source: UNESCO and OECD.

Figure 2c

Some developing countries have far to go to reach universal primary enrollment



Source: UNESCO.

leads to underinvestment in girls' schooling and to a persistent gender gap.

Despite an overall increase in the share of girls enrolled in school, an average six-year-old girl in a low- or middle-income country can expect to attend school for just 7.7 years, compared with 9.3 years for a boy. The largest gender disparity in access exists in South Asia, where in 1990 a girl could expect 6 years of schooling, and a boy 8.9 years. The gender gap is now very small in countries in Eastern and Central Europe and in Latin America, and is closing in all regions except South Asia, where policies to improve access seem to have benefited boys more than girls (World Bank 1995d).

The gender gap in school enrollment is not just a matter of access. In many countries demand for girls' education is low, reflecting cultural norms and the opportunity cost of their time spent in school. For a family, the costs and benefits of educating daughters may be quite different from those of educating sons. Many of the benefits of educating girls in developing countries are public: female education is linked with better health for women and their children, and lower fertility levels (Hill and King 1993). But many of the costs—ranging from opportunity costs to direct costs—are private. Where the quality of education is low, parents may conclude that their daughters should not attend or remain in school. Literate women, however, are more likely than illiterate ones to enroll their daughters in school, and the regions with the highest illiteracy among women are those with the widest gender gap.

Prospects for achieving targets

The international development goals call for all countries to attain universal primary education by 2015, and gender parity in primary and secondary education by 2005. How likely are developing countries, in the aggregate and individually, to achieve the targets?

Reaching the net primary enrollment target of 100 percent will not be easy for most poor countries (figure 2c). Overall, developing countries are not progressing fast enough to achieve the goal. Some countries have performed above par. But many will need to increase primary enrollment by more than 25 percentage points (table 2.10). Developing countries as a group will need to enroll some 200 million more children in 2015 than are enrolled today, an increase of more than 40 percent.

The goal of gender parity is equally elusive for most poor countries. Unlike other social indicators, female enrollment does not seem to benefit from faster economic growth (figure 2d). Nor has making primary schooling compulsory and free, as many countries have done, been enough to improve girls' participation. New strategies and renewed commitment by governments are required.

Strategies

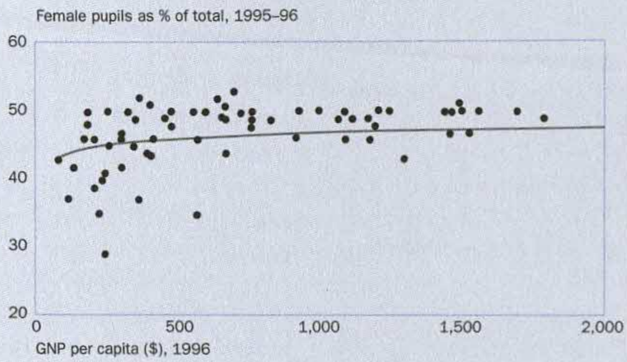
How, then, should countries move forward to reach universal primary enrollment and ensure equity?

Access remains a problem for the poor and disadvantaged in any society. World Bank research shows that in many countries in South Asia and Western and Central Africa a large fraction of poor children never enroll in school. In Benin, for example, only 26 percent of the poor aged 15–19 have completed grade 1 or more, compared with 80 percent among the rich (Filmer and Pritchett 1998). Improving access—building schools and getting children into them—is vital. Multiple shifts, multigrade classrooms, and nontraditional schooling are some of the strategies being implemented.

Beyond increasing supply, however, special measures will be needed to encourage the enrollment of girls and the poor. Because poor parents do not always appreciate the value of educating their children, and many parents place a higher priority on educating their sons than on schooling their daughters, educating parents can be important in enrolling and keeping poor children and girls in school. Subsidies, school meal programs, and scholarships also influence the enrollment decisions of the poor

Figure 2d

Female enrollments do not respond to income growth



Source: World Bank and UNESCO.

(Harbison and Hanushek 1992). Other ways to improve girls' enrollment and persistence is to address constraints that inhibit school attendance—by providing incentives, improving the relevance of education, and establishing supportive national policies (box 2a).

The real challenge for schools, however, is to offer education of sufficient quality to keep the students once they have enrolled. The main reason many poor children do not complete primary school is not that they fail to start; it is that they drop out. Dropouts account for 60–94 percent of those who fail to complete primary school in Latin America and East Asia, and 85–90 percent in Indonesia and the Philippines (Filmer and Pritchett 1998).

Poor quality of education can depress the demand for schooling, even where access exists (World Bank 1998c; Filmer and Pritchett 1998; Swanson 1988; Harbison and Hanushek 1992). Large class sizes, lack of materials, indifferent teaching, and deteriorating buildings are likely to influence a decision by poor parents to discontinue school attendance. Labor experts have found that some children would rather work than be subject to a school curriculum irrelevant to their needs (UNICEF, *The State of the World's Children 1999*).

The emphasis on quality and school effectiveness is not new. What is new is the recognition that quality must be of preeminent concern, and that there is little point in expanding access unless there is reasonable quality. To improve education outcomes, country policies and strategies must put special emphasis on:

- Improving access to relevant learning opportunities, which will require quality teaching environments.
- Using financial and nonfinancial resources more efficiently.
- Strengthening institutional capacity, so that countries are better able to set objectives and achieve them in their own way.

Monitoring progress

How will countries gauge whether students know what they need to know? If the success of education is to be assessed by what and how children learn, better ways must be found to measure education outcomes.

Box 2a

Strategies to improve girls' education

What does it take to lower the barriers to having girls enroll in school, stay in school, learn in school? A lot. Experience in a broad range of countries points to:

- **Providing incentives for girls' attendance, especially those that reduce the direct and opportunity costs of their attendance.** Scholarships, stipends, crèches for younger siblings, school meals, basic health care, and free uniforms and textbooks have all improved attendance.
- **Bringing schools closer to homes and making them safer.** Multiple school shifts, satellite schools, multigrade classrooms, and distance education can also do much to improve attendance—as can separate sanitation facilities and transport.
- **Improving the quality and relevance of education.** Classroom curricula, teachers' behavior, and school organization define the quality and relevance of girls' education—and thus affect girls' participation and academic achievement. These can be addressed through curriculum reform, gender sensitization programs for teachers, recruitment of female teachers, and prevention of sexual harassment.
- **Establishing supportive national policies.** School-level policies that target girls—such as quotas, open admissions, and automatic promotions—do more for girls' education than systemwide policies.
- **Pursuing sound economic policies and promoting labor market regulations that support equal employment and pay policies.** Ensuring that the labor market is competitive, making labor laws gender-neutral, and strengthening the machinery that enforces those laws can improve women's employment prospects and increase the incentives for women to enter the workforce.

The emphasis must be on how well education systems are meeting their responsibility for developing students' cognitive abilities and skills. An orientation toward outcomes means setting relevant standards and measuring how well schools attain them. But the information systems in place today focus on administrative record keeping: school numbers, student enrollments, and efficiency indicators such as pupil-teacher ratios, rates of repetition and dropout, and model-generated cohort completion rates. Despite an obvious interest in what education achieves, few systems in industrial or developing countries systematically collect information on the quality of educational achievement.

After Jomtien it became clear that appropriate systems for assessing learning achievement were needed to measure what was being learned as well as how well the education system was working. Countries are developing a variety of tests based on their national curriculum to monitor student performance (Greaney and Kellaghan 1996). International assessments that measure education outcomes in several countries, and thus provide a comparative framework, also are under way (box 2b).

Many developing countries are likely to encounter a range of common problems in conducting national or international assessments. These include unavailability of current school-age population estimates and enrollment figures, lack of experience in administering large-scale assessments, and insufficient funds and trained staff to rigorously analyze national or international data. The World Bank and other donors are assisting country-specific and international initiatives in monitoring and evaluation.

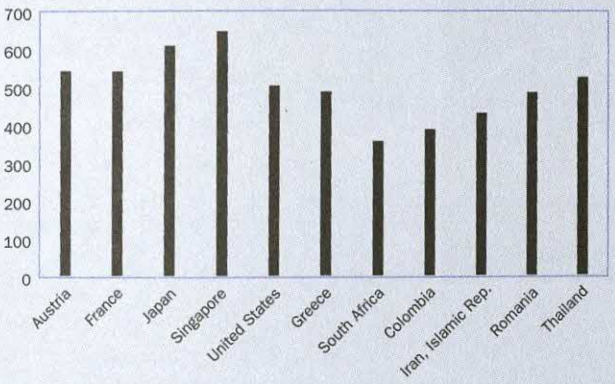
Box 2b

How countries stack up in student achievement

The Third International Mathematics and Science Study (TIMSS), carried out in 1994–95 by the International Association for Evaluation of Educational Achievement, is the largest, most ambitious international study of student achievement ever conducted. It tested students in 43 countries in mathematics and science, and it collected extensive information about the teaching and learning of mathematics and science from students, teachers, and school principals.

How big are the differences in the achievements of the lower-middle-income countries compared with their richer counterparts? Considerable.

Eighth-grade math achievement scores



Source: International Association for Evaluation of Educational Achievement 1997.

In 1998–99 a repeat of the TIMSS (TIMSS-R) is being administered to eighth-grade students in about 40 countries, many of them low and middle income. In the TIMSS-R eighth-grade students will complete achievement tests in mathematics and science as well as a questionnaire about their home background, classroom experiences, and attitudes toward math and science. Their math and science teachers will complete questionnaires about their academic preparation, instructional practices, and views on current issues in math and science education. School principals will provide information about school characteristics and resources.

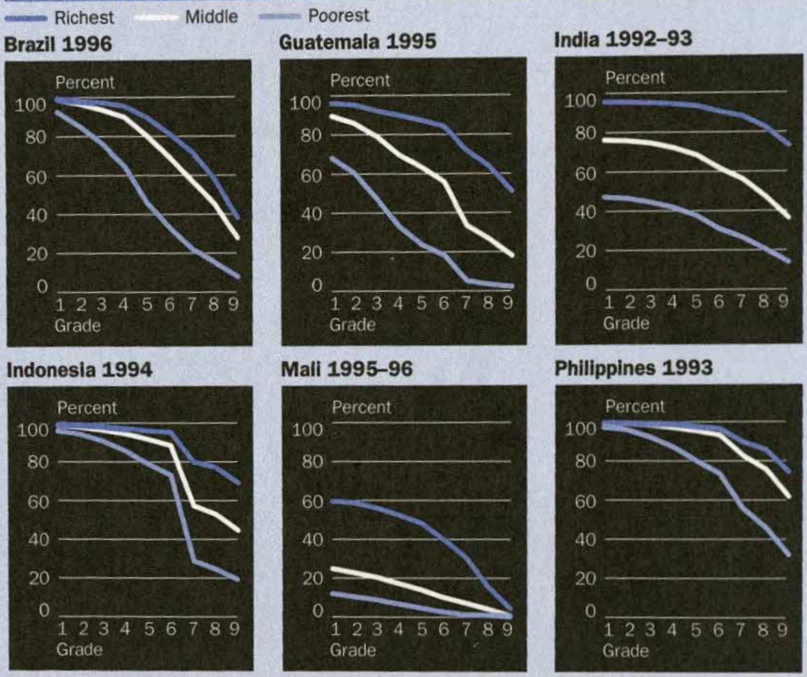
The TIMSS-R will allow countries that took part in the TIMSS in 1994–95 to monitor trends in math and science achievement at the eighth-grade level—as well as to evaluate information on many important policy issues. It will also enable countries that did not participate in the TIMSS to compare their math and science achievement, and instructional practices and policies, with international benchmarks.

The goals of Education for All will not be achieved easily or soon by many poor countries. But for countries and donors to aim for anything less would be to aim too low, and would fail to set the right expectations, with the right sense of urgency.

Note

1. This paragraph reflects the findings of Schultz 1961; Becker 1964; Psacharopoulos and Tzannatos 1992; Romer 1986; Lucas 1988; Azariadis and Drazen 1990; Barro 1991; and World Bank 1995d.

Proportion of 15- to 19-year-olds who have completed each grade



Enrollment profiles of the poor differ across countries but fall into distinctive regional patterns. In much of Latin America nearly all of the poor enroll in first grade, but then they drop out in droves. In other parts of the world (including much of South Asia and West Africa) the poor never enroll. Both patterns lead to low attainment.

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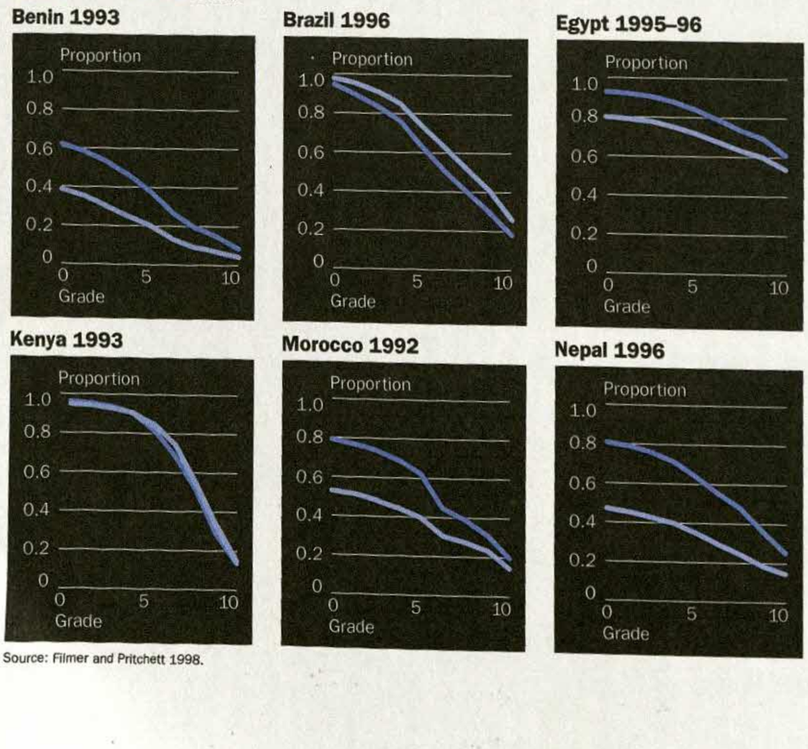
There are enormous differences across countries in the gap in educational attainment between the rich and the poor—the wealth gap

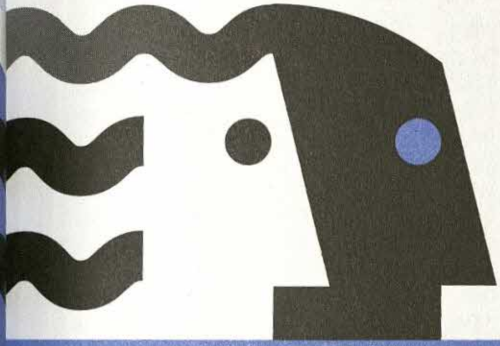
Differences across countries in the gender gap



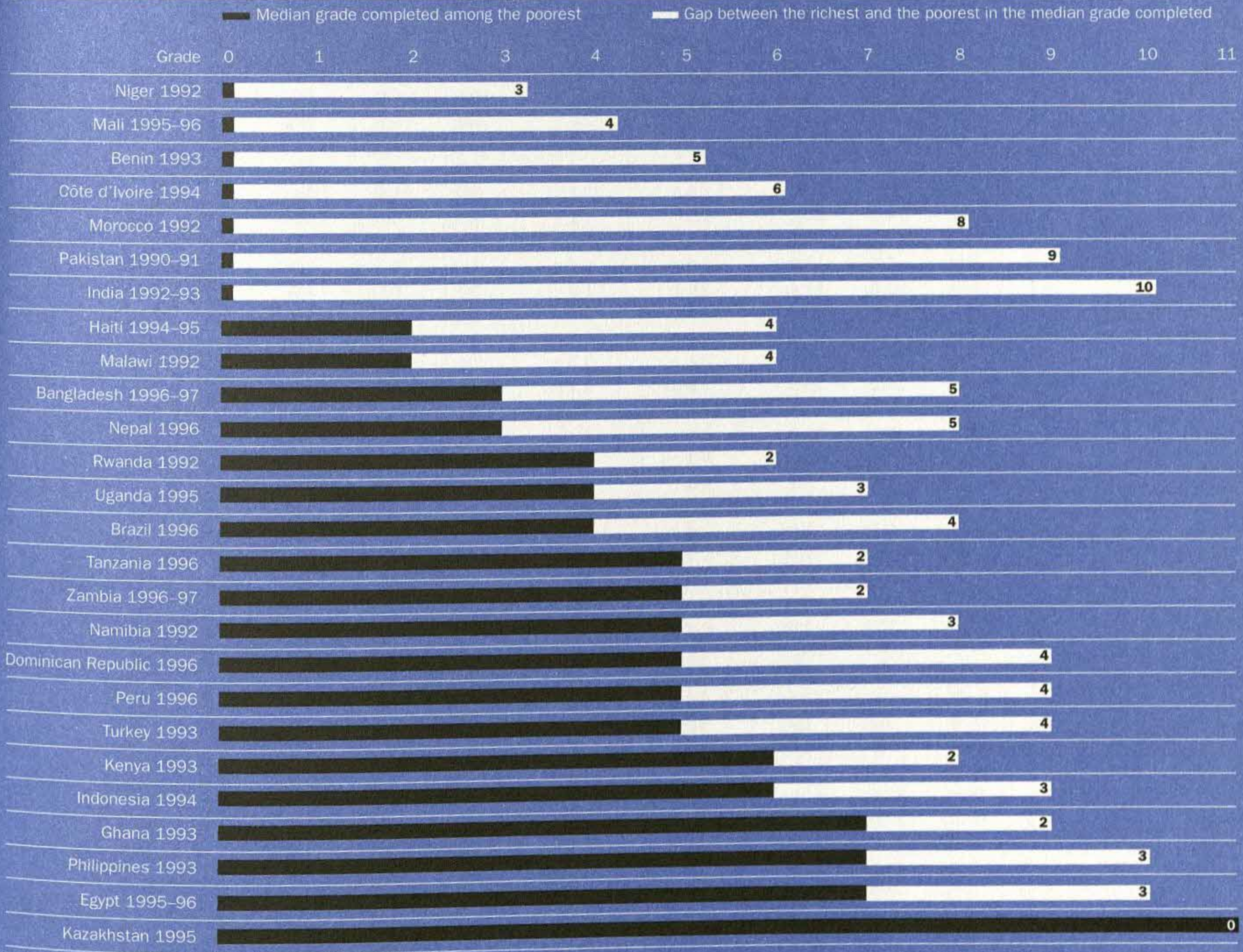
Source: Filmer and Pritchett 1998.

Girls are at a big educational disadvantage in some countries.

Patterns of educational attainment vary greatly across countries, and across population groups within countries. For some, basic education is practically universal—for others, attainment is dismal.



Differences across countries in the wealth gap



Source: Filmer and Pritchett 1998.

2.1 Population

	Total population			Average annual population growth rate		Age dependency ratio		Population aged 65 and above		Women aged 65 and above	
	millions			%		dependents as proportion of working-age population		% of total		per 100 men	
	1980	1997	2015	1980–97	1997–2015	1980	1997	1997	2015	1997	2015
Albania	2.7	3.3	3.9	1.3	0.9	0.7	0.6	6.3	8.5	130	123
Algeria	18.7	29.3	41.9	2.7	2.0	1.0	0.7	3.7	4.6	114	117
Angola	7.0	11.7	19.1	3.0	2.7	0.9	1.0	2.9	2.6	124	123
Argentina	28.1	35.7	42.5	1.4	1.0	0.6	0.6	9.5	10.7	143	143
Armenia	3.1	3.8	4.1	1.2	0.5	0.6	0.5	8.0	11.4	151	150
Australia	14.7	18.5	21.1	1.4	0.7	0.5	0.5	11.8	15.2	129	120
Austria	7.6	8.1	8.0	0.4	0.0	0.6	0.5	14.8	18.9	169	133
Azerbaijan	6.2	7.6	8.7	1.2	0.7	0.7	0.6	6.2	7.7	163	155
Bangladesh	86.7	123.6	160.2	2.1	1.4	1.0	0.8	3.3	4.1	81	94
Belarus	9.6	10.3	9.4	0.4	–0.5	0.5	0.5	12.8	13.5	204	180
Belgium	9.8	10.2	10.1	0.2	–0.1	0.5	0.5	16.0	19.0	147	137
Benin	3.5	5.8	9.2	3.0	2.6	1.0	1.0	2.9	2.7	101	118
Bolivia	5.4	7.8	11.2	2.2	2.0	0.9	0.8	3.9	4.4	123	128
Bosnia and Herzegovina	4.1	2.3	3.1	–3.3	1.5	0.5	0.4	8.1	10.7	148	140
Botswana	0.9	1.5	1.9	3.1	1.2	1.0	0.8	2.3	1.9	174	147
Brazil	121.7	163.7	200.5	1.7	1.1	0.7	0.6	4.8	6.6	128	145
Bulgaria	8.9	8.3	7.3	–0.4	–0.7	0.5	0.5	15.0	18.6	133	148
Burkina Faso	7.0	10.5	16.0	2.4	2.3	1.0	1.0	2.8	2.2	108	146
Burundi	4.1	6.4	9.5	2.6	2.2	0.9	0.9	2.7	1.9	155	147
Cambodia	6.5	10.5	14.3	2.8	1.7	0.7	0.8	3.0	3.9	176	164
Cameroon	8.7	13.9	21.7	2.8	2.5	0.9	0.9	3.5	3.1	120	117
Canada	24.6	30.3	33.2	1.2	0.5	0.5	0.5	12.2	16.5	135	122
Central African Republic	2.3	3.4	4.6	2.3	1.6	0.8	0.9	3.7	2.7	137	142
Chad	4.5	7.2	11.6	2.8	2.7	0.8	1.2	3.1	2.3	87	151
Chile	11.1	14.6	17.7	1.6	1.1	0.6	0.6	6.8	9.8	142	138
China	981.2	1,227.2	1,390.3	1.3	0.7	0.7	0.5	6.6	8.8	106	104
Hong Kong, China	5.0	6.5	7.4	1.5	0.7	0.5	0.4	9.8	13.4	126	113
Colombia	28.4	40.0	51.4	2.0	1.4	0.8	0.6	4.5	5.9	128	141
Congo, Dem. Rep.	27.0	46.7	78.7	3.2	2.9	1.0	1.0	2.8	2.6	135	126
Congo, Rep.	1.7	2.7	4.3	2.8	2.6	0.9	1.0	3.2	2.4	131	136
Costa Rica	2.3	3.5	4.4	2.4	1.3	0.7	0.6	4.9	7.4	115	120
Côte d'Ivoire	8.2	14.2	19.2	3.2	1.7	1.0	0.9	2.7	2.4	94	88
Croatia	4.6	4.8	4.7	0.2	–0.1	0.5	0.5	13.6	18.0	171	157
Cuba	9.7	11.1	11.8	0.8	0.4	0.7	0.4	9.1	13.9	109	120
Czech Republic	10.2	10.3	10.0	0.0	–0.2	0.6	0.5	13.3	18.7	161	141
Denmark	5.1	5.3	5.4	0.2	0.1	0.5	0.5	14.7	18.0	140	126
Dominican Republic	5.7	8.1	10.4	2.1	1.4	0.8	0.6	4.2	6.2	105	120
Ecuador	8.0	11.9	15.7	2.4	1.5	0.9	0.7	4.4	5.7	118	128
Egypt, Arab Rep.	40.9	60.3	79.2	2.3	1.5	0.8	0.7	4.4	5.5	120	116
El Salvador	4.6	5.9	8.1	1.5	1.7	1.0	0.7	4.6	5.4	131	133
Eritrea	2.4	3.8	5.8	2.7	2.4	..	0.9	2.7	2.7	131	121
Estonia	1.5	1.5	1.3	–0.1	–0.6	0.5	0.5	13.3	17.9	212	203
Ethiopia	37.7	59.8	88.6	2.7	2.2	1.0	1.0	2.7	2.0	128	109
Finland	4.8	5.1	5.3	0.4	0.2	0.5	0.5	14.4	19.9	167	136
France	53.9	58.6	60.4	0.5	0.2	0.6	0.5	15.4	18.0	150	141
Gabon	0.7	1.2	1.7	3.0	2.0	0.7	0.8	5.8	5.0	124	122
Gambia, The	0.6	1.2	1.8	3.6	2.3	0.8	0.8	2.9	3.6	124	113
Georgia	5.1	5.4	5.4	0.4	0.0	0.5	0.5	11.9	14.4	171	173
Germany	78.3	82.1	80.1	0.3	–0.1	0.5	0.5	15.5	20.5	171	133
Ghana	10.7	18.0	27.3	3.0	2.3	0.9	0.9	3.1	3.5	120	119
Greece	9.6	10.5	10.4	0.5	–0.1	0.6	0.5	16.6	20.3	127	131
Guatemala	6.8	10.5	15.8	2.5	2.3	1.0	0.9	3.4	3.4	108	127
Guinea	4.5	6.9	10.1	2.6	2.1	0.9	0.9	2.6	2.7	110	105
Guinea-Bissau	0.8	1.1	1.6	2.1	1.8	0.8	0.9	4.0	3.5	125	124
Haiti	5.4	7.5	10.1	2.0	1.6	0.8	0.8	3.6	3.7	125	142
Honduras	3.6	6.0	8.9	3.0	2.2	1.0	0.9	3.2	3.6	117	124

Population 2.1

	Total population			Average annual population growth rate		Age dependency ratio		Population aged 65 and above		Women aged 65 and above	
	millions			%		dependents as proportion of working-age population		% of total		per 100 men	
	1980	1997	2015	1980–97	1997–2015	1980	1997	1997	2015	1997	2015
Hungary	10.7	10.2	9.6	–0.3	–0.3	0.5	0.5	14.2	17.1	165	167
India	687.3	962.4	1,202.8	2.0	1.2	0.7	0.7	4.7	5.9	108	107
Indonesia	148.3	200.4	251.3	1.8	1.3	0.8	0.6	4.4	6.0	116	122
Iran, Islamic Rep.	39.1	60.9	81.2	2.6	1.6	0.9	0.7	4.5	4.8	102	101
Iraq	13.0	21.8	31.9	3.1	2.1	0.9	0.8	3.0	4.1	115	112
Ireland	3.4	3.7	4.1	0.4	0.7	0.7	0.5	11.3	13.1	134	126
Israel	3.9	5.8	7.5	2.4	1.4	0.7	0.6	9.3	10.2	133	126
Italy	56.4	57.5	54.7	0.1	–0.3	0.5	0.5	16.6	21.1	145	140
Jamaica	2.1	2.6	3.0	1.1	0.9	0.9	0.6	6.4	7.1	125	133
Japan	116.8	126.1	125.3	0.5	0.0	0.5	0.4	15.5	25.4	141	128
Jordan	2.2	4.4	6.8	4.2	2.4	1.1	0.8	2.8	4.1	79	101
Kazakhstan	14.9	15.8	16.6	0.4	0.3	..	0.6	7.1	8.2	200	173
Kenya	16.6	28.6	40.2	3.2	1.9	1.1	0.9	2.9	2.2	118	110
Korea, Dem. Rep.	17.7	22.9	26.5	1.5	0.8	0.8	0.5	4.8	7.1	197	125
Korea, Rep.	38.1	46.0	51.7	1.1	0.6	0.6	0.4	6.0	10.8	165	139
Kuwait	1.4	1.8	2.8	1.6	2.3	0.7	0.6	1.8	5.0	88	101
Kyrgyz Republic	3.6	4.6	5.6	1.4	1.1	0.8	0.7	5.8	5.5	173	157
Lao PDR	3.2	4.8	7.3	2.4	2.3	0.8	0.9	3.6	3.3	111	133
Latvia	2.5	2.5	2.1	–0.2	–0.8	0.5	0.5	13.7	17.7	220	198
Lebanon	3.0	4.1	5.2	1.9	1.3	0.8	0.6	5.6	6.0	117	130
Lesotho	1.3	2.0	2.8	2.4	1.8	0.9	0.8	4.1	4.2	132	129
Libya	3.0	5.2	7.7	3.2	2.2	1.0	0.8	2.9	4.9	92	93
Lithuania	3.4	3.7	3.6	0.5	–0.1	0.5	0.5	12.6	15.7	194	196
Macedonia, FYR	1.9	2.0	2.2	0.3	0.5	0.6	0.5	9.2	12.4	120	132
Madagascar	8.9	14.1	22.9	2.7	2.7	0.9	0.9	3.0	3.2	124	122
Malawi	6.2	10.3	15.3	3.0	2.2	1.0	1.0	2.5	2.4	119	106
Malaysia	13.8	21.7	28.9	2.7	1.6	0.8	0.6	3.9	6.0	117	120
Mali	6.6	10.3	17.2	2.6	2.9	1.0	1.0	3.3	2.4	133	144
Mauritania	1.6	2.5	3.8	2.7	2.4	0.9	0.9	3.1	3.3	138	120
Mauritius	1.0	1.1	1.3	1.0	0.9	0.6	0.5	6.0	8.6	134	145
Mexico	67.6	94.3	120.2	2.0	1.3	1.0	0.6	4.4	6.3	125	138
Moldova	4.0	4.3	4.2	0.4	–0.1	0.5	0.5	9.5	10.6	167	160
Mongolia	1.7	2.5	3.3	2.5	1.5	0.9	0.7	3.9	4.5	129	114
Morocco	19.4	27.3	35.8	2.0	1.5	0.9	0.6	4.3	5.2	114	132
Mozambique	12.1	16.6	23.0	1.9	1.8	0.9	1.0	4.0	3.3	81	135
Myanmar	33.8	43.9	52.3	1.5	1.0	0.8	0.5	4.5	5.3	117	122
Namibia	1.0	1.6	2.3	2.7	1.9	0.9	0.8	3.7	3.5	121	113
Nepal	14.5	22.3	32.2	2.5	2.0	0.8	0.8	3.6	4.0	99	104
Netherlands	14.2	15.6	16.1	0.6	0.2	0.5	0.5	13.4	18.2	146	123
New Zealand	3.1	3.8	4.1	1.1	0.5	0.6	0.5	11.3	14.2	131	127
Nicaragua	2.9	4.7	7.0	2.8	2.2	1.0	0.9	3.0	3.6	126	126
Niger	5.6	9.8	17.2	3.3	3.1	1.0	1.0	2.4	2.2	129	138
Nigeria	71.1	117.9	185.4	3.0	2.5	0.9	0.9	2.5	2.8	136	127
Norway	4.1	4.4	4.7	0.4	0.3	0.6	0.5	15.7	17.6	137	121
Oman	1.1	2.3	3.5	4.2	2.4	0.9	0.9	2.6	4.8	105	74
Pakistan	82.7	128.5	193.0	2.6	2.3	0.9	0.8	3.1	3.7	97	101
Panama	2.0	2.7	3.4	2.0	1.3	0.8	0.6	5.3	7.5	106	119
Papua New Guinea	3.1	4.5	6.3	2.2	1.9	0.8	0.7	3.0	3.9	105	113
Paraguay	3.1	5.1	7.3	2.9	2.0	0.9	0.8	3.5	4.2	140	124
Peru	17.3	24.4	32.4	2.0	1.6	0.8	0.7	4.4	5.8	119	126
Philippines	48.3	73.5	102.8	2.5	1.9	0.8	0.7	3.5	5.1	119	116
Poland	35.6	38.7	39.7	0.5	0.1	0.5	0.5	11.4	14.5	165	157
Portugal	9.8	9.9	9.7	0.1	–0.1	0.6	0.5	16.1	16.6	160	155
Puerto Rico	3.2	3.8	4.4	1.0	0.8	0.7	0.5	10.0	12.9	132	169
Romania	22.2	22.6	21.4	0.1	–0.3	0.6	0.5	12.3	14.3	138	149
Russian Federation	139.0	147.3	139.0	0.3	–0.3	0.5	0.5	12.2	13.3	226	192

2.1 Population

	Total population			Average annual population growth rate		Age dependency ratio		Population aged 65 and above		Women aged 65 and above	
	millions			%		dependents as proportion of working-age population		% of total		per 100 men	
	1980	1997	2015	1980–97	1997–2015	1980	1997	1997	2015	1997	2015
Rwanda	5.2	7.9	11.6	2.5	2.1	1.0	0.9	1.9	1.6	139	118
Saudi Arabia	9.4	20.1	35.0	4.5	3.1	0.9	0.8	2.8	4.0	99	69
Senegal	5.5	8.8	13.6	2.7	2.4	0.9	0.9	2.6	2.7	123	121
Sierra Leone	3.2	4.7	6.7	2.3	1.9	0.9	0.9	2.6	2.6	134	136
Singapore	2.3	3.1	3.7	1.8	0.9	0.5	0.4	6.5	11.3	123	118
Slovak Republic	5.0	5.4	5.5	0.5	0.1	0.6	0.5	10.9	13.8	158	156
Slovenia	1.9	2.0	2.0	0.3	–0.1	0.5	0.4	12.8	18.1	181	145
South Africa	27.6	40.6	49.3	2.3	1.1	0.8	0.6	4.8	4.7	162	134
Spain	37.4	39.3	37.9	0.3	–0.2	0.6	0.5	15.9	18.6	140	139
Sri Lanka	14.7	18.6	22.4	1.4	1.0	0.7	0.5	6.2	9.1	102	121
Sudan	18.7	27.7	40.6	2.3	2.1	0.9	0.8	3.1	3.9	120	112
Sweden	8.3	8.8	8.9	0.4	0.0	0.6	0.6	17.3	21.1	135	122
Switzerland	6.3	7.1	7.1	0.7	0.0	0.5	0.5	14.7	20.7	148	131
Syrian Arab Republic	8.7	14.9	22.3	3.2	2.2	1.1	0.9	3.0	3.4	110	128
Tajikistan	4.0	6.0	8.0	2.5	1.6	0.9	0.8	4.3	4.1	143	130
Tanzania	18.6	31.3	45.4	3.1	2.1	1.0	0.9	2.5	2.2	123	116
Thailand	46.7	60.6	68.5	1.5	0.7	0.8	0.5	5.2	7.4	129	134
Togo	2.6	4.3	6.6	3.0	2.4	0.9	1.0	3.0	2.5	124	119
Trinidad and Tobago	1.1	1.3	1.5	1.1	0.9	0.7	0.5	6.2	8.6	117	120
Tunisia	6.4	9.2	11.7	2.2	1.3	0.8	0.6	5.6	6.2	96	112
Turkey	44.5	63.7	79.4	2.1	1.2	0.8	0.5	5.3	7.1	120	124
Turkmenistan	2.9	4.7	6.0	2.9	1.4	0.8	0.7	4.2	4.3	159	142
Uganda	12.8	20.3	30.7	2.7	2.3	1.0	1.0	2.2	1.4	116	96
Ukraine	50.0	50.7	44.5	0.1	–0.7	0.5	0.5	13.9	14.9	208	181
United Arab Emirates	1.0	2.6	3.7	5.3	2.0	0.4	0.4	2.0	8.4	52	..
United Kingdom	56.3	59.0	59.5	0.3	0.0	0.6	0.5	15.8	18.7	139	126
United States	227.2	267.6	296.9	1.0	0.6	0.5	0.5	12.3	14.2	143	131
Uruguay	2.9	3.3	3.6	0.7	0.6	0.6	0.6	12.4	13.1	147	165
Uzbekistan	16.0	23.7	30.9	2.3	1.5	0.9	0.8	4.4	4.5	155	139
Venezuela	15.1	22.8	29.9	2.4	1.5	0.8	0.7	4.2	6.3	122	123
Vietnam	53.7	76.7	96.1	2.1	1.3	0.9	0.7	4.8	4.8	142	150
West Bank and Gaza	..	2.6	4.8	..	3.5	..	1.0	3.5	2.8	125	137
Yemen, Rep.	8.5	16.1	25.5	3.7	2.6	1.1	1.1	3.1	2.4	91	106
Yugoslavia, FR (Serb./Mont.)	9.8	10.6	10.9	0.5	0.2	0.5	0.5	12.6	14.4	129	128
Zambia	5.7	9.4	13.4	2.9	1.9	1.1	0.9	2.2	2.0	97	109
Zimbabwe	7.0	11.5	14.5	2.9	1.3	1.0	0.8	2.8	2.5	117	114
World	**4,429.9 s**	**5,819.6 s**	**7,101.4 s**	**1.6 w**	**1.1 w**	**0.7 w**	**0.6 w**	**6.7 w**	**7.9 w**	**129 w**	**122 w**
Low income	1,385.6	2,035.6	2,758.8	2.3	1.7	0.8	0.8	3.9	4.4	111	111
Middle income	2,217.3	2,856.9	3,370.4	1.5	0.9	0.7	0.5	6.4	8.0	127	122
Lower middle income	1,792.5	2,282.9	2,663.0	1.4	0.9	0.7	0.5	6.6	8.1	125	118
Upper middle income	424.9	573.9	707.4	1.8	1.2	0.7	0.6	6.0	7.6	138	138
Low & middle income	3,602.9	4,892.5	6,129.2	1.8	1.3	0.8	0.6	5.4	6.4	122	118
East Asia & Pacific	1,359.4	1,751.2	2,050.6	1.5	0.9	0.7	0.5	6.0	7.8	110	109
Europe & Central Asia	425.8	474.0	487.3	0.6	0.2	0.6	0.5	10.5	11.7	183	165
Latin America & Carib.	360.3	493.9	624.3	1.9	1.3	0.8	0.6	5.1	6.7	128	138
Middle East & N. Africa	174.1	279.6	393.9	2.7	1.9	0.9	0.7	3.9	4.7	109	108
South Asia	902.6	1,281.3	1,651.9	2.1	1.4	0.8	0.7	4.4	5.4	104	106
Sub-Saharan Africa	380.7	612.3	921.3	2.8	2.3	0.9	0.9	2.9	2.7	126	122
High income	826.9	927.0	972.1	0.7	0.3	0.5	0.5	13.6	17.4	144	131
Europe EMU	275.9	290.6	286.8	0.3	–0.1	0.5	0.5	15.6	19.4	154	137

Population 2.1

About the data

Knowing the size, growth rate, and age distribution of a country's population is important for evaluating the welfare of the country's citizens, assessing the productive capacity of its economy, and estimating the quantity of goods and services that will be needed to meet its future needs. Thus governments, businesses, and anyone interested in analyzing economic performance must have accurate population estimates.

Population estimates are usually based on national censuses, but the frequency and quality of these censuses vary by country. Most countries conduct a complete enumeration no more than once a decade. Precensus and postcensus estimates are interpolations or extrapolations based on demographic models. Errors and undercounting occur even in high-income countries; in developing countries such errors may be substantial because of limits on the transportation, communications, and resources required to conduct a full census. Moreover, the international comparability of population indicators is limited by differences in the concepts, definitions, data collection procedures, and estimation methods used by national statistical agencies and other organizations that collect population data.

Of the 148 economies listed in the table, 132 (almost 90 percent) conducted a census between 1988 and 1998. The currentness of a census, along with the availability of complementary data from surveys or registration systems, is one of many objective ways to judge the quality of demographic data. In some European countries registration systems offer complete information on population in the absence of a census. See *Primary data documentation* for the most recent census or survey year and for registration completeness.

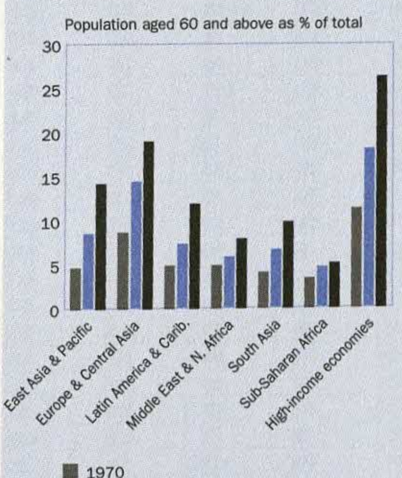
Current population estimates for developing countries that lack recent census-based population data, and precensus and postcensus estimates for countries with census data, are provided by national statistical offices or by the United Nations Population Division. The standard estimation method requires fertility, mortality, and net migration data, which are often collected from sample surveys, some of which may be small or have limited coverage. These estimates are the product of demographic modeling and so are also susceptible to biases and errors due to shortcomings of the model as well as the data.

The quality and reliability of official demographic data are also affected by public trust in the government, the government's commitment to full and accurate enumeration, the confidentiality and protection against misuse accorded to census data, and the independence of census agencies from undue political influence.

Population projections are made using the cohort component method. This method involves compiling separate projections of fertility, mortality, and net migration levels by age and gender, then applying them to the age and gender structure in the 1995 base year. Fertility, mortality, and net migration levels are projected using demographic models with current levels and trends as inputs. Countries where fertility has been falling are assumed to have further declines at the rate of the previous 10 years until fertility reaches the replacement level of about two children. In countries where fertility has remained high, the transition to smaller families is assumed to occur at the average rate of decline of countries that are currently making this transition. Countries where fertility is below two children per woman are assumed to remain at this level for another decade, after which fertility rates will gradually return to replacement level. Similarly, mortality changes are modeled by assuming that the rate of change in the previous decade will continue in the near future. Future mortality in countries with high levels of HIV infection is adjusted to reflect the lagged impact of the disease on mortality.

Figure 2.1

The aging population



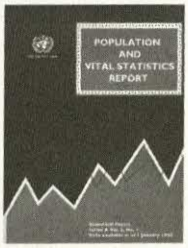
Source: World Bank staff estimates.

The elderly population is growing rapidly in both relative and absolute terms as lower fertility leads to smaller birth cohorts and as mortality in older cohorts declines. In most countries women experience lower mortality than men, far outnumbering them by age 60.

Definitions

• **Total population** of an economy includes all residents regardless of legal status or citizenship—except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. The indicators shown are midyear estimates for 1980 and 1997 and projections for 2015. • **Average annual population growth rate** is the exponential change for the period indicated. See *Statistical methods* for more information. • **Age dependency ratio** is the ratio of dependents—people younger than 15 and older than 65—to the working-age population—those aged 15–64. • **Population aged 65 and above** is the percentage of the total population that is 65 or older. • **Women aged 65 and above** is the ratio of women to men in that age group.

Data sources



The World Bank's population estimates are produced by the Human Development Network and the Development Data Group in consultation with the Bank's operational staff and resident missions. Important inputs to the World Bank's demographic work come from the following sources: census reports and other statistical publications from country statistical offices; demographic and health surveys conducted by national agencies, Macro International, and the U.S. Centers for Disease Control and Prevention; United Nations, Department of Economic and Social Affairs, Statistics Division, *Population and Vital Statistics Report* (quarterly); United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 1998 Revision;* Eurostat, *Demographic Statistics* (various years); South Pacific Commission, *Pacific Island Populations Data Sheet 1997;* Centro Latinoamericano de Demografía, *Boletín Demográfico* (various years); and U.S. Bureau of the Census, International Database.

2.2 Population dynamics

	Crude death rate per 1,000 people		Crude birth rate per 1,000 people		Projected population by 2030	Population momentum	Average annual population growth rates Age 0–14 %		Age 15–64 %		Age 65+ %	
	1980	1997	1980	1997	millions	1997	1980–97	1997–2010	1980–97	1997–2010	1980–97	1997–2010
Albania	6	7	29	19	4	1.4	0.4	–1.0	1.7	1.5	2.5	2.9
Algeria	12	5	42	27	51	1.6	1.5	0.9	3.6	2.8	2.3	2.9
Angola	23	19	50	48	26	1.5	3.4	2.5	2.6	3.2	2.8	2.2
Argentina	9	8	24	20	48	1.4	1.0	–0.1	1.5	1.4	2.3	1.4
Armenia	6	6	23	12	4	1.2	0.4	–3.1	1.3	1.2	3.0	2.7
Australia	7	7	15	14	22	1.2	0.3	–0.1	1.5	1.0	2.6	1.7
Austria	12	10	12	10	8	1.0	–0.6	–1.6	0.7	0.1	0.2	1.1
Azerbaijan	7	6	25	18	10	1.4	0.6	–2.2	1.5	1.6	2.0	2.3
Bangladesh	18	10	44	28	189	1.5	1.4	–0.8	2.6	2.7	1.8	2.4
Belarus	10	13	16	9	9	1.0	–0.4	–3.2	0.4	0.1	1.4	–0.2
Belgium	12	10	13	11	10	1.0	–0.6	–0.9	0.3	0.1	0.9	0.6
Benin	19	13	49	43	13	1.6	3.3	1.8	2.9	3.4	1.1	1.4
Bolivia	15	9	39	33	14	1.6	1.8	1.2	2.4	2.7	2.8	2.6
Bosnia and Herzegovina	7	7	19	13	3	1.1	–4.6	0.8	–2.9	1.9	–1.6	3.3
Botswana	10	15	45	34	2	1.3	2.3	0.3	3.6	2.1	4.0	–0.8
Brazil	9	7	31	21	225	1.4	0.5	–0.2	2.4	1.6	2.6	2.6
Bulgaria	11	14	15	9	7	0.9	–1.9	–3.2	–0.3	–0.4	1.0	0.2
Burkina Faso	20	19	47	45	22	1.4	2.4	2.0	2.5	2.7	2.5	0.4
Burundi	18	20	46	43	12	1.4	2.8	1.6	2.6	2.8	1.0	–0.6
Cambodia	27	12	40	34	17	1.4	3.2	0.4	2.5	2.7	3.1	2.8
Cameroon	16	11	45	39	28	1.5	2.8	2.2	2.8	2.8	2.7	1.4
Canada	7	7	15	12	34	1.1	0.4	–0.8	1.2	0.8	2.8	1.8
Central African Republic	19	19	43	37	6	1.3	2.4	1.0	2.2	2.2	1.9	–0.9
Chad	22	17	44	45	16	1.5	3.8	2.0	1.7	3.8	1.8	0.9
Chile	7	6	23	20	20	1.4	0.7	–0.5	1.9	1.5	2.8	2.9
China	6	8	18	17	1,486	1.2	–0.6	–0.8	2.0	1.1	3.3	2.1
Hong Kong, China	5	6	17	10	8	1.1	–0.3	–0.8	1.7	1.2	4.0	1.9
Colombia	7	6	31	25	60	1.5	0.9	0.0	2.6	2.1	3.0	2.3
Congo, Dem. Rep.	16	15	48	47	112	1.5	3.4	2.7	3.1	3.2	3.1	2.4
Congo, Rep.	16	16	45	44	6	1.5	3.0	2.4	2.8	2.9	2.4	0.7
Costa Rica	4	4	30	23	5	1.6	1.6	–0.7	2.9	2.0	4.3	3.4
Côte d'Ivoire	17	16	51	37	23	1.4	2.9	1.0	3.4	2.4	3.7	0.5
Croatia	..	13	..	10	5	0.9	–0.7	–1.2	0.3	–0.2	1.1	1.5
Cuba	6	7	14	14	12	1.2	–1.5	–1.5	1.5	0.6	1.9	2.5
Czech Republic	13	11	15	9	10	1.0	–1.6	–2.4	0.5	0.1	0.0	1.1
Denmark	11	11	11	13	5	1.0	–0.7	0.0	0.4	0.1	0.3	0.7
Dominican Republic	7	5	33	26	12	1.6	0.9	–0.1	2.8	2.1	3.7	3.3
Ecuador	9	6	36	25	19	1.6	1.2	0.0	3.1	2.4	2.9	2.7
Egypt, Arab Rep.	13	7	39	25	93	1.5	1.8	–0.2	2.5	2.5	2.8	2.5
El Salvador	11	6	36	28	10	1.6	0.3	0.7	2.2	2.5	3.7	2.1
Eritrea	..	12	..	41	8	1.4	..	2.2	..	2.7	..	2.1
Estonia	12	13	15	9	1	0.9	–0.8	–3.4	0.1	–0.4	0.3	1.0
Ethiopia	22	20	48	46	115	1.4	2.9	2.0	2.5	2.5	2.3	–0.1
Finland	9	10	13	12	5	0.9	0.0	–0.5	0.4	0.1	1.5	1.4
France	10	9	15	12	61	1.1	–0.4	–0.6	0.6	0.3	1.1	0.5
Gabon	19	16	33	37	2	1.4	3.8	2.1	2.6	2.2	2.4	1.0
Gambia, The	24	13	48	43	2	1.4	3.5	2.4	3.6	2.4	3.5	3.6
Georgia	9	7	18	10	5	1.1	–0.4	–2.7	0.4	0.5	2.0	1.4
Germany	12	10	11	10	76	0.9	–0.6	–1.3	0.5	–0.3	0.2	1.7
Ghana	14	9	45	36	34	1.6	2.9	1.3	3.1	3.2	3.5	3.2
Greece	9	10	15	10	10	1.0	–1.5	–1.1	0.8	–0.1	1.9	1.1
Guatemala	11	7	43	34	20	1.6	2.3	1.1	2.7	3.3	3.4	2.1
Guinea	24	17	46	41	13	1.5	2.6	1.2	2.6	3.0	2.6	2.3
Guinea-Bissau	26	21	44	42	2	1.4	2.6	1.6	1.6	2.3	2.1	1.1
Haiti	15	13	37	32	12	1.5	2.0	0.4	2.0	2.6	0.8	1.4
Honduras	10	5	43	34	11	1.7	2.5	1.0	3.5	3.3	3.9	2.8

Population dynamics 2.2

	Crude death rate per 1,000 people		Crude birth rate per 1,000 people		Projected population by 2030 millions	Population momentum	Average annual population growth rates Age 0–14 %		Age 15–64 %		Age 65+ %	
	1980	1997	1980	1997		1997	1980–97	1997–2010	1980–97	1997–2010	1980–97	1997–2010
Hungary	14	14	14	10	9	0.9	–1.6	–1.5	0.0	–0.2	0.0	0.4
India	13	9	34	27	1,384	1.4	1.4	–0.3	2.3	2.0	2.9	2.4
Indonesia	12	8	34	24	287	1.4	0.4	0.0	2.5	1.8	3.4	3.2
Iran, Islamic Rep.	11	6	44	22	96	1.6	1.6	–0.8	3.2	2.9	4.3	1.7
Iraq	9	10	41	33	39	1.6	2.4	0.7	3.5	3.1	3.8	3.7
Ireland	10	9	22	14	4	1.2	–1.3	0.0	1.1	0.9	0.7	1.0
Israel	7	6	24	21	9	1.4	1.5	0.4	2.7	2.1	2.8	1.3
Italy	10	10	11	9	51	0.9	–2.3	–0.9	0.4	–0.4	1.5	1.0
Jamaica	7	6	28	24	4	1.5	–0.2	–0.7	2.0	1.5	0.8	1.2
Japan	6	7	14	10	118	0.8	–2.0	–0.8	0.6	–0.5	3.6	2.7
Jordan	..	4	..	31	8	1.7	3.0	1.6	5.2	3.1	3.6	4.5
Kazakhstan	8	10	24	14	18	1.2	..	–1.7	..	0.8	..	1.0
Kenya	13	13	51	37	49	1.5	2.5	0.8	3.8	2.9	2.2	–0.6
Korea, Dem. Rep.	6	9	21	21	29	1.2	–0.7	–0.2	2.5	1.2	3.4	2.8
Korea, Rep.	6	6	22	15	54	1.2	–1.3	–0.3	1.9	0.7	3.8	4.1
Kuwait	4	2	37	22	3	1.6	0.8	0.5	1.7	3.9	3.5	8.1
Kyrgyz Republic	9	7	30	22	7	1.5	1.2	–1.3	1.5	2.3	1.5	0.6
Lao PDR	20	14	45	38	9	1.5	2.6	1.7	2.2	3.0	4.0	1.6
Latvia	13	13	15	8	2	0.9	–0.6	–4.2	–0.2	–0.4	0.1	0.8
Lebanon	9	6	30	22	6	1.5	0.8	–0.6	2.5	2.2	2.2	1.4
Lesotho	15	12	40	35	3	1.5	2.1	1.2	2.6	2.4	2.2	1.8
Libya	12	5	46	29	9	1.7	2.3	1.0	3.8	2.9	4.7	5.1
Lithuania	10	12	16	10	4	1.0	–0.3	–2.6	0.6	0.2	1.1	1.2
Macedonia, FYR	7	8	21	16	2	1.2	–0.8	–0.6	0.5	0.7	2.0	2.3
Madagascar	16	11	47	42	30	1.6	2.9	2.1	2.7	3.3	1.1	3.0
Malawi	23	23	55	48	20	1.4	2.8	1.7	3.1	2.8	3.6	1.7
Malaysia	6	5	31	26	34	1.5	2.0	0.4	3.0	2.4	3.1	3.6
Mali	22	16	49	47	24	1.6	2.7	2.7	2.5	3.2	4.1	0.9
Mauritania	19	14	43	41	5	1.5	2.8	1.9	2.7	2.9	3.0	2.6
Mauritius	6	7	24	17	2	1.3	–0.8	–0.5	1.6	1.4	3.8	2.3
Mexico	7	5	34	25	141	1.6	0.4	–0.4	3.0	2.1	2.8	3.1
Moldova	10	10	20	11	4	1.1	0.0	–2.6	0.4	0.5	1.6	0.4
Mongolia	11	7	38	23	4	1.5	1.6	–0.9	3.0	2.7	4.2	2.3
Morocco	12	7	38	26	42	1.5	0.6	0.4	3.0	2.2	2.3	2.3
Mozambique	20	20	46	41	28	1.5	2.1	0.7	1.5	3.0	3.3	0.4
Myanmar	14	10	36	27	58	1.3	–0.1	0.3	2.4	1.3	2.3	2.0
Namibia	14	12	41	36	3	1.5	2.5	1.4	2.8	2.5	2.7	1.2
Nepal	17	11	43	34	39	1.5	2.4	1.1	2.6	2.8	3.6	2.5
Netherlands	8	9	13	12	16	1.0	–0.6	–0.9	0.8	0.3	1.5	1.4
New Zealand	9	7	16	15	4	1.2	0.0	–0.1	1.1	0.8	1.9	1.1
Nicaragua	11	5	46	32	9	1.7	2.3	0.6	3.1	3.5	3.8	3.0
Niger	23	18	51	52	25	1.5	3.5	3.2	3.1	3.3	3.2	2.5
Nigeria	18	12	50	40	241	1.5	2.8	2.2	3.1	3.0	2.7	3.2
Norway	10	10	12	14	5	0.9	–0.3	–0.1	0.6	0.5	0.8	0.2
Oman	10	3	45	30	4	1.8	4.2	0.5	4.3	3.7	4.2	5.4
Pakistan	15	8	47	36	244	1.7	2.3	1.2	2.7	3.2	3.1	3.2
Panama	6	5	30	23	4	1.5	0.7	–0.5	2.7	2.0	2.9	2.8
Papua New Guinea	14	10	36	32	8	1.4	1.7	1.4	2.5	2.4	6.1	3.1
Paraguay	8	5	37	31	9	1.6	2.6	0.5	3.1	3.1	1.3	2.7
Peru	10	6	35	27	38	1.5	1.0	0.5	2.6	2.2	3.2	2.8
Philippines	9	6	35	29	123	1.6	1.8	0.8	2.8	2.5	3.9	3.6
Poland	10	10	20	11	40	1.1	–0.2	–1.8	0.6	0.5	1.2	1.0
Portugal	10	11	16	11	10	1.0	–2.2	–0.9	0.3	0.1	2.6	–0.3
Puerto Rico	6	8	23	16	5	1.3	–0.4	0.1	1.4	1.0	2.4	1.9
Romania	10	13	18	10	21	1.0	–1.7	–2.2	0.5	0.0	1.1	0.6
Russian Federation	11	14	16	9	132	1.0	–0.1	–2.6	0.3	0.2	1.4	–0.2

2.2 Population dynamics

	Crude death rate		Crude birth rate		Projected population by 2030	Population momentum	Average annual population growth rates					
	per 1,000 people		per 1,000 people				Age 0–14 %		Age 15–64 %		Age 65+ %	
	1980	1997	1980	1997	millions	1997	1980–97	1997–2010	1980–97	1997–2010	1980–97	1997–2010
Rwanda	19	22	51	46	15	1.3	1.6	2.8	2.3	3.2	1.2	0.5
Saudi Arabia	9	4	43	35	49	1.6	4.1	3.0	4.9	3.2	4.5	4.7
Senegal	18	13	46	40	18	1.5	2.7	2.1	2.8	2.9	2.2	2.6
Sierra Leone	29	26	49	46	8	1.3	2.6	1.2	1.9	2.6	1.1	2.0
Singapore	5	4	17	13	4	1.1	0.7	–0.3	2.0	1.3	3.6	3.3
Slovak Republic	10	10	19	11	6	1.1	–0.7	–1.9	0.8	0.6	0.7	1.0
Slovenia	10	10	15	9	2	0.9	–1.5	–1.9	0.7	–0.1	0.9	1.9
South Africa	12	8	36	25	56	1.5	1.4	0.0	2.7	1.7	4.4	0.3
Spain	8	10	15	9	36	1.0	–2.9	–1.1	0.8	–0.1	2.6	0.5
Sri Lanka	6	6	28	19	25	1.3	0.0	–0.2	1.8	1.4	3.4	2.8
Sudan	17	12	45	33	50	1.5	1.7	1.7	2.8	2.4	3.1	3.2
Sweden	11	11	12	10	9	0.9	0.1	–1.1	0.4	0.1	0.7	0.7
Switzerland	9	9	12	11	7	1.0	–0.1	–1.3	0.8	–0.1	1.0	1.7
Syrian Arab Republic	9	5	46	29	28	1.7	2.5	0.7	3.8	3.5	2.8	2.9
Tajikistan	8	6	37	23	10	1.6	2.2	–0.5	2.7	3.0	2.2	1.3
Tanzania	15	16	47	41	57	1.4	2.8	1.5	3.2	2.7	3.4	0.7
Thailand	8	7	28	17	73	1.3	–0.8	–1.0	2.6	1.2	3.8	2.4
Togo	16	16	45	41	9	1.4	3.1	1.9	2.8	2.9	2.6	0.9
Trinidad and Tobago	7	7	29	16	2	1.3	0.0	–0.9	1.6	1.4	1.8	2.1
Tunisia	9	7	35	23	14	1.5	0.8	–0.2	2.9	2.1	4.5	1.7
Turkey	10	7	32	22	90	1.4	0.5	0.2	2.9	1.7	2.8	2.7
Turkmenistan	8	7	34	24	7	1.5	2.4	–0.9	3.2	2.7	2.8	1.3
Uganda	18	20	49	48	40	1.4	2.8	1.9	2.6	2.8	1.9	–1.3
Ukraine	11	15	15	9	42	0.9	–0.6	–2.9	0.1	–0.4	1.0	–0.3
United Arab Emirates	5	3	30	18	4	1.2	5.2	0.5	5.1	2.8	7.8	9.8
United Kingdom	12	11	13	12	60	1.0	–0.3	–1.0	0.3	0.2	0.5	0.6
United States	9	8	16	15	313	1.1	0.8	–0.2	0.9	0.9	1.5	0.7
Uruguay	10	10	19	18	4	1.2	0.2	–0.1	0.7	0.8	1.7	0.8
Uzbekistan	8	6	34	27	37	1.6	2.0	–0.6	2.6	2.7	1.5	1.6
Venezuela	6	5	33	25	35	1.6	1.6	–0.2	2.9	2.4	3.9	3.4
Vietnam	8	7	36	21	112	1.5	1.0	–1.1	2.8	2.5	2.2	1.2
West Bank and Gaza	..	5	..	41	7	1.8	..	3.2	..	4.2	..	1.9
Yemen, Rep.	19	13	53	40	33	1.6	3.6	1.4	3.8	3.8	4.8	0.7
Yugoslavia, FR (Serb./Mont.)	9	11	18	13	11	1.0	–0.3	–0.5	0.5	0.3	1.9	1.0
Zambia	15	19	50	42	16	1.4	2.5	1.2	3.3	2.7	2.5	0.7
Zimbabwe	12	12	43	31	17	1.4	2.2	–0.3	3.5	2.4	3.3	0.1
World	10 w	9 w	27 w	23 w	8,052 s	1.3 w	0.8 w	0.1 w	2.0 w	1.6 w	2.4 w	1.8 w
Low income	15	11	40	32	3,379	1.5	1.9	0.7	2.5	2.4	2.7	2.2
Middle income	8	8	24	19	3,723	1.3	0.2	–0.4	2.1	1.4	2.7	1.9
Lower middle income	8	8	23	19	2,916	1.3	0.1	–0.6	2.0	1.3	2.8	1.8
Upper middle income	9	7	29	21	807	1.4	0.7	–0.1	2.3	1.7	2.2	2.1
Low & middle income	11	9	30	25	6,669	1.4	1.0	0.1	2.2	1.8	2.7	2.0
East Asia & Pacific	8	7	22	19	2,243	1.3	–0.2	–0.5	2.2	1.4	3.3	2.2
Europe & Central Asia	10	11	19	13	498	1.1	0.2	–1.6	1.0	0.6	1.4	0.5
Latin America & Carib.	8	7	31	23	720	1.5	0.8	–0.1	2.5	1.9	2.7	2.5
Middle East & N. Africa	12	7	41	27	481	1.6	2.0	0.5	3.3	2.8	3.3	2.5
South Asia	14	9	37	29	1,937	1.4	1.5	0.0	2.4	2.2	2.8	2.5
Sub-Saharan Africa	18	15	47	41	1,192	1.5	2.7	1.9	2.9	2.8	2.8	1.6
High income	9	8	15	12	981	1.0	–0.3	–0.6	0.9	0.3	1.7	1.4
Europe EMU	10	10	13	10	278	1.0	–1.3	–1.0	0.6	–0.1	1.1	1.0

Population dynamics 2.2

About the data

The vital rates shown in the table are based on data derived from birth and death registration systems, censuses, and sample surveys conducted by national statistical offices, United Nations agencies, and donor organizations. The estimates for 1997 for many countries are based on extrapolations of levels and trends measured in earlier years.

Vital registers are the preferred source of these data, but in many developing countries systems for registering births and deaths do not exist or are incomplete because of deficiencies in geographic coverage or coverage of events. Many developing countries carry out specialized household surveys that estimate vital rates by asking respondents about births and deaths in the recent past. Estimates derived in this way are subject to sampling errors, as well as errors due to inaccurate recall by the respondents.

The Statistics Division of the United Nations' Department of Economic and Social Affairs monitors the completeness of vital registration systems. It provides quarterly reports of the latest birth and death rates, as well as an indication of their completeness, in the *Population and Vital Statistics Report*. The share of countries with at least 90 percent complete vital registration increased from 45 percent in 1988 to 52 percent in 1998. Still, some of the most populous developing countries—China, India, Indonesia, Brazil, Pakistan, Nigeria, Bangladesh—do not have complete vital registration systems. Fewer than 25 percent of vital events worldwide are thought to be recorded.

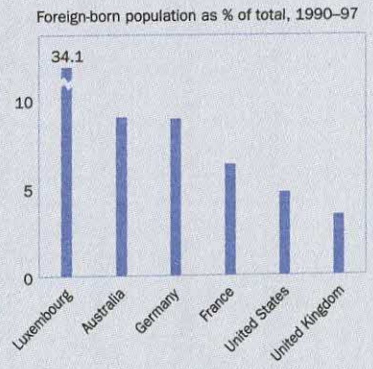
International migration is the only other factor besides birth and death rates that determines a country's population growth. In the industrial world about 40 percent of annual population growth in 1990–95 was due to migration, while in the developing world migration reduced the population growth rate by about 3 percent. Estimating international migration is difficult. At any time many people are located outside their home country as tourists, workers, or refugees, or for other reasons. Standards relating to the duration and purpose of international moves that qualify as migration vary, and accurate estimates require information on flows in and out of countries that is difficult to collect.

Over the next several decades the population of low- and middle-income countries will continue to grow. The rates of growth will decline, but the absolute increases will be large—and accompanied by substantial shifts in the age structure. Even when fertility reaches the replacement level of about two children per couple, the number of births will remain high—and population growth will not stop for several decades. This phenomenon, called population momentum, is a facet of the youthful age structures typical of developing country populations. It occurs because large cohorts born in previous years move through the reproductive ages, generating more births than are offset by deaths in the smaller, older cohorts.

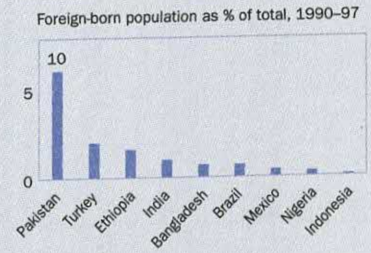
The growth rate of the total population (see table 2.1) conceals the fact that different age groups may grow at very different rates. In many developing countries the population under 15 was earlier growing rapidly, but is now starting to shrink. Previously high fertility rates and declining mortality are now reflected in rapid growth of the working-age population.

Figure 2.2

International migration adds to population growth in industrial countries . . .



. . . but not in developing countries



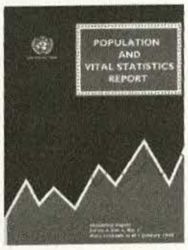
Source: OECD 1998; United Nations Department of Economic and Social Affairs 1996.

The size of a country's foreign-born population, usually expressed as a percentage of the total population, is determined by current and past migration flows and by naturalization policies and preferences. Because departures of migrants are rarely recorded as well as arrivals are, estimates of the stock of migrants are useful for projecting the long-term effect of migration on population growth.

Definitions

- **Crude death rate** and **crude birth rate** are the number of deaths and the number of live births occurring during the year, per 1,000 population estimated at midyear. The difference between the crude birth rate and crude death rate is the rate of natural increase. • **Projected population by 2030** is the total number of people expected to be alive in 2030, based on a cohort component projection in which assumed future patterns in fertility, mortality, and international migration are applied to the current age structure. • **Population momentum** is the ratio of the population when zero growth has been achieved to the population in year *t* (in this case 2000), given the assumption that fertility remains at replacement level from year *t* onward. • **Average annual population growth rates** are calculated using the exponential endpoint method (see *Statistical methods* for more information).

Data sources



The World Bank's population estimates are produced by the Human Development Network and the Development Data Group in consultation with the Bank's operational staff and resident missions. Important inputs to the World Bank's demographic work come from many sources: census reports and other statistical publications from country statistical offices; demographic and health surveys conducted by national sources, Macro International, and the U.S. Centers for Disease Control and Prevention; United Nations, Department of Economic and Social Affairs, Statistics Division, *Population and Vital Statistics Report* (quarterly); United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 1998 Revision;* Eurostat, *Demographic Statistics* (various years); South Pacific Commission, *Pacific Island Populations Data Sheet 1997;* Centro Latinoamericano de Demografía, *Boletín Demográfico* (various years); and U.S. Bureau of the Census, International Data Base.

2.3 Labor force structure

	Population aged 15–64		Labor force								
	millions		Total millions			Average annual growth rate %		Female % of labor force		Children 10–14 % of age group	
	1980	1997	1980	1997	2010	1980–97	1997–2010	1980	1997	1980	1997
Albania	2	2	1	2	2	1.8	1.5	39	41	4	1
Algeria	9	17	5	9	15	3.9	3.8	21	26	7	1
Angola	4	6	3	5	8	2.6	3.0	47	46	30	27
Argentina	17	22	11	14	18	1.7	1.9	28	32	8	4
Armenia	2	2	1	2	2	1.4	1.3	48	48	0	0
Australia	10	12	7	9	10	2.0	0.8	37	43	0	0
Austria	5	5	3	4	4	0.6	0.0	41	40	0	0
Azerbaijan	4	5	3	3	4	1.2	1.7	48	44	0	0
Bangladesh	44	69	41	63	82	2.6	2.1	42	42	35	29
Belarus	6	7	5	5	5	0.3	–0.1	50	49	0	0
Belgium	6	7	4	4	4	0.3	0.0	34	40	0	0
Benin	2	3	2	3	4	2.6	3.0	47	48	30	27
Bolivia	3	4	2	3	4	2.5	2.7	33	38	19	13
Bosnia and Herzegovina	3	2	2	1	1	–2.3	2.0	33	38	1	0
Botswana	0	1	0	1	1	3.1	1.6	50	46	26	16
Brazil	70	106	47	75	90	2.7	1.3	28	35	19	15
Bulgaria	6	6	5	4	4	–0.5	–0.8	45	48	0	0
Burkina Faso	3	5	4	5	7	1.8	2.0	48	47	71	48
Burundi	2	3	2	3	5	2.5	2.6	50	49	50	49
Cambodia	4	6	4	5	7	2.6	2.4	55	52	27	24
Cameroon	5	7	4	6	8	2.7	2.7	37	38	34	24
Canada	17	21	12	16	17	1.6	0.6	40	45	0	0
Central African Republic	1	2	..	..	..	..	..	..	..	39	30
Chad	2	3	2	3	5	2.5	2.9	43	45	42	38
Chile	7	9	4	6	8	2.6	2.0	26	33	0	0
China	586	829	540	736	823	1.8	0.9	43	45	30	10
Hong Kong, China	3	5	2	3	4	1.8	1.0	34	37	6	0
Colombia	16	25	9	17	23	3.6	2.2	26	38	12	6
Congo, Dem. Rep.	14	23	12	20	29	2.9	2.9	45	44	33	29
Congo, Rep.	1	1	1	1	2	2.7	2.8	42	43	27	26
Costa Rica	1	2	1	1	2	3.1	1.9	21	30	10	5
Côte d'Ivoire	4	7	3	6	7	3.2	2.1	32	33	28	20
Croatia	3	3	2	2	2	0.2	–0.1	40	44	0	0
Cuba	6	8	4	5	6	2.3	0.7	31	39	0	0
Czech Republic	6	7	5	6	6	0.4	–0.2	47	47	0	0
Denmark	3	4	3	3	3	0.5	–0.4	44	46	0	0
Dominican Republic	3	5	2	3	5	3.0	2.3	25	30	25	15
Ecuador	4	7	3	5	6	3.4	2.7	20	27	9	5
Egypt, Arab Rep.	23	36	14	22	32	2.6	2.7	27	29	18	10
El Salvador	2	3	2	2	4	2.8	2.9	27	35	17	15
Eritrea	..	2	1	2	3	2.6	2.7	47	47	44	39
Estonia	1	1	1	1	1	–0.1	–0.3	51	49	0	0
Ethiopia	20	30	17	26	34	2.4	2.2	42	41	46	42
Finland	3	3	2	3	2	0.5	–0.4	47	48	0	0
France	34	38	24	26	27	0.6	0.2	40	45	0	0
Gabon	0	1	0	1	1	2.4	1.8	45	44	29	17
Gambia, The	0	1	0	1	1	3.6	2.4	45	45	44	36
Georgia	3	4	3	3	3	0.3	0.3	49	47	0	0
Germany	52	56	38	41	41	0.5	–0.1	40	42	0	0
Ghana	6	10	5	8	12	3.0	2.7	51	51	16	13
Greece	6	7	4	5	5	1.1	0.1	28	37	5	0
Guatemala	3	6	2	4	6	2.9	3.4	22	27	19	15
Guinea	2	4	2	3	4	2.2	2.2	47	47	41	33
Guinea-Bissau	0	1	0	1	1	1.7	1.9	40	40	43	38
Haiti	3	4	3	3	4	1.6	1.7	45	43	33	24
Honduras	2	3	1	2	3	3.4	3.7	25	31	14	8

Labor force structure 2.3

	Population aged 15–64		Labor force								
	millions		Total millions			Average annual growth rate %		Female % of labor force		Children 10–14 % of age group	
	1980	1997	1980	1997	2010	1980–97	1997–2010	1980	1997	1980	1997
Hungary	7	7	5	5	5	–0.4	–0.3	43	45	0	0
India	394	583	302	423	537	2.0	1.8	34	32	21	13
Indonesia	83	127	58	94	124	2.9	2.1	35	40	13	9
Iran, Islamic Rep.	20	35	12	18	28	2.6	3.2	20	25	14	4
Iraq	7	12	4	6	9	3.1	3.0	17	19	11	3
Ireland	2	2	1	2	2	1.0	1.4	28	34	1	0
Israel	2	4	1	2	3	3.1	2.4	34	40	0	0
Italy	36	39	23	25	25	0.7	–0.2	33	38	2	0
Jamaica	1	2	1	1	2	1.9	1.3	46	46	0	0
Japan	79	87	57	68	66	1.0	–0.3	38	41	0	0
Jordan	1	3	1	1	2	5.3	3.6	15	23	4	0
Kazakhstan	..	10	..	8	8	..	0.8	48	47	0	0
Kenya	8	15	8	15	20	3.7	2.4	46	46	45	40
Korea, Dem. Rep.	10	15	8	12	13	2.6	0.7	45	43	3	0
Korea, Rep.	24	33	16	23	27	2.3	1.2	39	41	0	0
Kuwait	1	1	0	1	1	1.9	4.2	13	31	0	0
Kyrgyz Republic	2	3	2	2	3	1.3	2.1	48	47	0	0
Lao PDR	2	3	..	..	..	..	..	..	..	31	26
Latvia	2	2	1	1	1	–0.4	–0.4	51	50	0	0
Lebanon	2	3	1	1	2	3.0	2.5	23	29	5	0
Lesotho	1	1	1	1	1	2.2	2.3	38	37	28	22
Libya	2	3	1	2	2	2.8	2.6	19	22	9	0
Lithuania	2	2	2	2	2	0.4	0.1	50	48	0	0
Macedonia, FYR	1	1	1	1	1	0.7	0.7	36	41	1	0
Madagascar	5	7	4	7	10	2.5	3.1	45	45	40	35
Malawi	3	5	3	5	7	2.7	2.2	51	49	45	34
Malaysia	8	13	5	9	12	3.0	2.8	34	37	8	3
Mali	3	5	3	5	7	2.4	2.9	47	46	61	53
Mauritania	1	1	1	1	2	2.5	2.7	45	44	30	23
Mauritius	1	1	0	0	1	2.1	1.1	26	32	5	3
Mexico	35	58	22	38	51	3.1	2.3	27	32	9	6
Moldova	3	3	2	2	2	0.1	0.3	50	49	3	0
Mongolia	1	1	1	1	2	2.9	2.2	46	47	4	2
Morocco	10	17	7	11	15	2.5	2.5	34	35	21	4
Mozambique	6	8	7	9	11	1.5	2.0	49	48	39	33
Myanmar	19	29	17	23	28	1.8	1.3	44	43	28	24
Namibia	1	1	0	1	1	2.4	2.1	40	41	34	20
Nepal	8	12	7	10	14	2.3	2.5	39	40	56	44
Netherlands	9	11	6	7	7	1.5	–0.1	32	40	0	0
New Zealand	2	2	1	2	2	2.1	0.4	34	44	0	0
Nicaragua	1	2	1	2	3	3.6	3.4	28	35	19	13
Niger	3	5	3	5	7	2.9	3.4	45	44	48	45
Nigeria	36	62	29	47	68	2.8	2.8	36	36	29	25
Norway	3	3	2	2	2	0.9	0.2	41	46	0	0
Oman	1	1	0	1	1	3.6	2.8	6	15	6	0
Pakistan	44	69	29	48	71	2.9	3.1	23	27	23	17
Panama	1	2	1	1	1	2.9	2.0	30	34	6	3
Papua New Guinea	2	3	2	2	3	2.2	2.2	42	42	28	18
Paraguay	2	3	1	2	3	2.9	2.7	27	29	15	7
Peru	9	15	5	9	13	3.0	2.8	24	30	4	2
Philippines	27	43	19	31	43	2.9	2.5	35	37	14	7
Poland	23	26	19	20	20	0.4	0.3	45	46	0	0
Portugal	6	7	5	5	5	0.5	0.0	39	44	8	2
Puerto Rico	2	2	1	1	2	1.9	1.4	32	36	0	0
Romania	14	15	11	11	11	–0.2	0.0	46	44	0	0
Russian Federation	95	100	76	78	79	0.1	0.1	49	49	0	0

2.3 Labor force structure

	Population aged 15–64		Labor force								
	millions		Total millions			Average annual growth rate %		Female % of labor force		Children 10–14 % of age group	
	1980	**1997**	**1980**	**1997**	**2010**	**1980–97**	**1997–2010**	**1980**	**1997**	**1980**	**1997**
Rwanda	3	4	3	4	6	2.7	2.7	49	49	43	42
Saudi Arabia	5	11	3	7	10	5.0	3.5	8	14	5	0
Senegal	3	5	3	4	6	2.6	2.5	42	43	43	30
Sierra Leone	2	2	1	2	2	1.9	2.1	36	36	19	15
Singapore	2	2	1	2	2	2.3	0.6	35	39	2	0
Slovak Republic	3	4	2	3	3	0.9	0.4	45	48	0	0
Slovenia	1	1	1	1	1	0.3	–0.1	46	46	0	0
South Africa	16	25	10	16	19	2.4	1.5	35	38	1	0
Spain	23	27	14	17	17	1.2	0.2	28	36	0	0
Sri Lanka	9	12	5	8	10	2.2	1.6	27	36	4	2
Sudan	10	16	7	11	16	2.6	2.8	27	29	33	29
Sweden	5	6	4	5	5	0.7	–0.1	44	48	0	0
Switzerland	4	5	3	4	4	1.4	0.0	37	40	0	0
Syrian Arab Republic	4	8	2	5	7	3.8	3.7	24	26	14	4
Tajikistan	2	3	2	2	3	2.3	3.0	47	44	0	0
Tanzania	9	16	9	16	21	3.1	2.2	50	49	43	38
Thailand	26	41	24	36	41	2.4	0.9	47	46	25	15
Togo	1	2	1	2	3	2.6	2.7	39	40	36	28
Trinidad and Tobago	1	1	0	1	1	1.7	1.9	31	33	1	0
Tunisia	3	6	2	4	5	2.8	2.5	29	31	6	0
Turkey	25	41	19	30	38	2.8	1.8	36	37	21	22
Turkmenistan	2	3	1	2	3	3.0	2.5	47	46	0	0
Uganda	6	10	7	10	13	2.5	2.2	48	48	49	45
Ukraine	33	34	27	25	24	–0.3	–0.3	50	49	0	0
United Arab Emirates	1	2	1	1	2	4.9	2.0	5	14	0	0
United Kingdom	36	38	27	30	30	0.5	0.0	39	44	0	0
United States	151	175	109	136	150	1.3	0.7	41	46	0	0
Uruguay	2	2	1	1	2	1.4	0.9	31	41	4	2
Uzbekistan	9	13	6	10	14	2.5	2.6	48	46	0	0
Venezuela	8	14	5	9	13	3.4	2.5	27	34	4	1
Vietnam	28	45	26	39	49	2.5	1.7	48	49	22	8
West Bank and Gaza	..	1	..	..	..	..	..	..	..	..	..
Yemen, Rep.	4	8	2	5	7	4.3	2.9	33	28	26	20
Yugoslavia, FR (Serb./Mont.)	6	7	4	5	5	0.6	0.5	39	43	0	0
Zambia	3	5	2	4	5	2.9	2.5	45	45	19	16
Zimbabwe	3	6	3	5	7	3.0	1.8	44	44	37	28
World	**2,586 s**	**3,635 s**	**2,028 s**	**2,807 s**	**3,374 s**	**1.9 w**	**1.4 w**	**39 t**	**40 t**	**20 w**	**13 w**
Low income	758	1,161	612	902	1,192	2.3	2.1	37	37	27	21
Middle income	1,299	1,852	1,044	1,455	1,712	1.9	1.3	40	42	20	8
Lower middle income	1,054	1,490	877	1,206	1,405	1.9	1.2	42	43	22	8
Upper middle income	245	362	167	249	307	2.3	1.6	33	36	11	9
Low & middle income	2,057	3,014	1,656	2,357	2,904	2.1	1.6	39	40	23	14
East Asia & Pacific	796	1,156	703	990	1,145	2.0	1.1	43	45	27	10
Europe & Central Asia	265	313	207	235	252	0.7	0.5	47	46	3	4
Latin America & Carib.	201	306	130	209	269	2.8	1.9	28	34	13	9
Middle East & N. Africa	91	160	54	92	136	3.1	3.1	24	26	14	5
South Asia	508	759	392	563	730	2.1	2.0	34	33	23	16
Sub-Saharan Africa	195	320	170	268	372	2.7	2.5	42	42	35	30
High income	529	621	372	449	470	1.1	0.3	38	43	0	0
Europe EMU	178	196	119	134	134	0.7	0.0	37	41	1	0

Labor force structure 2.3

About the data

The labor force is the supply of labor in an economy. It includes people who are currently employed and people who are unemployed but seeking work, as well as first-time job-seekers. Not everyone who works is included, however. Unpaid workers, family workers, and students are among those usually omitted, and in some countries members of the military are not counted. The size of the labor force tends to vary during the year as seasonal workers enter and leave the labor force.

Data on the labor force are compiled by the International Labour Organisation (ILO) from census or labor force surveys. Despite the ILO's efforts to encourage the use of international standards, labor force data are not fully comparable because of differences among countries, and sometimes within countries, in definitions and methods of collection, classification, and tabulation. In some countries data on the labor force refer to people above a specific age, while in others there is no specific age provision. The reference period of the census or survey is another important source of differences: in some countries data refer to a person's status on the day of the census or survey or during a specific period before the inquiry date, while in others the data are recorded without reference to any period. In developing countries, where the household is often the basic unit of production and all members contribute to output, but some at low intensity or irregular intervals, the estimated labor force may be significantly smaller than the numbers actually working (ILO, *Yearbook of Labour Statistics 1997*).

The labor force estimates in the table were calculated by World Bank staff by applying activity rates from the ILO database to World Bank population estimates to create a series consistent with these population estimates. This procedure sometimes results in estimates of labor force size that differ slightly from those published in the ILO's *Yearbook of Labour Statistics.*

The population aged 15–64 is often used to provide a rough estimate of the potential labor force. But in many developing countries children under 15 work full or part time. And in some high-income countries many workers postpone retirement past age 65. As a result labor force participation rates calculated in this way may systematically over- or underestimate actual rates.

Estimates of women in the labor force are not comparable internationally because in many countries large numbers of women assist on farms or in other family enterprises without pay, and countries differ in the criteria used to determine the extent to which such workers are to be counted as part of the labor force.

Reliable estimates of child labor are hard to obtain. In many countries child labor is officially presumed not to exist, and so is not included in surveys or in official data. Underreporting also occurs because data exclude children engaged in agricultural or household activities with their families. Most child workers are in Asia. But the share of children working is highest in Africa, where, on average, one in three children aged 10–14 is engaged in some form of economic activity, mostly in agriculture (Fallon and Tzannatos 1998). Available statistics suggest that more boys than girls work. But the number of girls working is often underestimated because surveys exclude those working as unregistered domestic help or doing full-time household work to enable their parents to work outside the home.

Definitions

• **Population aged 15–64** is the number of people who could potentially be economically active. • **Total labor force** comprises people who meet the ILO definition of the economically active population: all people who supply labor for the production of goods and services during a specified period. It includes both the employed and the unemployed. While national practices vary in the treatment of such groups as the armed forces and seasonal or part-time workers, in general the labor force includes the armed forces, the unemployed, and first-time job-seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector. • **Average annual growth rate of the labor force** is calculated using the exponential endpoint method (see *Statistical methods* for more information). • **Females as a percentage of the labor force** shows the extent to which women are active in the labor force. • **Children 10–14 in the labor force** is the share of that age group that is active in the labor force.

Data sources

YEARBOOK OF LABOUR STATISTICS

ANNUAIRE DES STATISTIQUES DU TRAVAIL

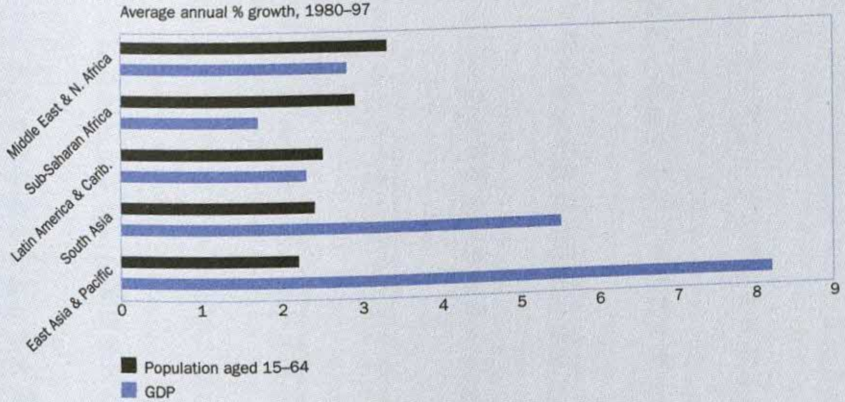
1997

ANUARIO DE ESTADISTICAS DEL TRABAJO

Population estimates are from the World Bank's population database. Labor force activity rates are from the ILO database Estimates and Projections of the Economically Active Population, 1950–2010. The ILO publishes estimates of the economically active population in its *Yearbook of Labour Statistics.*

Figure 2.3

Does rapid increase in the labor force depress growth and living standards?



Source: World Bank staff estimates.

Rapid expansion of the labor force does not depress growth, according to the World Bank's *World Development Report 1995: Workers in an Integrating World.* While growth rates of the working-age population varied only slightly across regions between 1980 and 1997, GDP growth rates differed widely. Nevertheless, the short-term problem of what to do with future labor supply in countries with stagnating economies remains. The biggest challenge is generating sufficient employment. While industrial countries have to generate work for a labor force growing at about 0.5 percent, developing countries will have to expand job opportunities by several times that amount just to maintain current employment levels.

2.4 Employment by economic activity

	Agriculture				Industry				Services			
	Male % of male labor force		Female % of female labor force		Male % of male labor force		Female % of female labor force		Male % of male labor force		Female % of female labor force	
	1980	**1990–97**[a]	**1980**	**1990–97**[a]	**1980**	**1990–97**[a]	**1980**	**1990–97**[a]	**1980**	**1990–97**[a]	**1980**	**1990–97**[a]
Albania	54	51	62	60	28	26	17	19	18	24	21	21
Algeria	27	18	69	57	33	38	6	7	40	45	25	36
Angola	67	65	87	86	13	14	1	2	20	21	11	13
Argentina	17	16	3	3	40	39	18	17	44	46	79	81
Armenia	21	24	21	11	48	47	38	39	31	29	41	51
Australia	*7*	6	*4*	3	*34*	32	*15*	11	*44*	58	*67*	80
Austria	9	6	13	8	51	42	25	17	41	48	62	72
Azerbaijan	28	27	42	36	36	35	20	21	36	38	38	43
Bangladesh	67	53	81	76	5	11	14	8	29	33	5	11
Belarus	29	26	23	13	44	45	33	36	28	30	44	51
Belgium	4	3	2	2	41	34	16	11	50	54	68	72
Benin	66	62	69	65	10	12	4	4	24	27	27	30
Bolivia	53	48	53	45	21	22	11	10	26	30	36	45
Bosnia and Herzegovina	26	9	38	16	45	54	24	37	30	37	39	48
Botswana	53	39	74	55	18	30	2	9	28	31	24	36
Brazil	41	28	26	14	28	28	14	13	31	43	60	74
Bulgaria	..	..	22	13	..	..	..	..	..	..	..	..
Burkina Faso	92	91	93	94	3	2	2	2	5	7	5	5
Burundi	88	86	98	98	4	4	1	1	9	10	1	1
Cambodia	70	69	80	78	7	8	7	8	23	24	14	14
Cameroon	65	62	87	83	11	12	2	3	24	26	11	14
Canada	6	5	3	2	34	29	14	11	52	57	74	78
Central African Republic	79	74	90	87	5	6	1	0	16	20	9	13
Chad	82	77	95	91	6	7	0	1	12	16	4	8
Chile	*20*	18	*2*	4	*25*	32	*13*	13	*52*	45	*79*	76
China	71	69	79	76	16	17	12	13	14	14	10	11
Hong Kong, China	1	1	1	1	47	39	56	33	52	60	43	66
Colombia	..	1	..	0	..	29	..	18	..	60	..	66
Congo, Dem. Rep.	62	58	84	81	18	20	4	5	20	23	12	14
Congo, Rep.	42	33	81	69	20	23	2	4	38	44	17	27
Costa Rica	43	27	5	5	23	24	20	17	34	43	75	69
Côte d'Ivoire	60	54	75	72	10	12	5	6	30	34	20	22
Croatia	23	17	28	15	38	38	28	28	39	45	45	57
Cuba	30	24	10	8	32	36	22	21	39	41	68	71
Czech Republic	14	13	12	9	67	54	44	36	19	33	45	55
Denmark	*10*	7	*3*	3	*41*	37	*17*	16	*44*	55	*76*	81
Dominican Republic	40	31	11	9	26	32	16	23	34	38	73	68
Ecuador	44	39	22	16	22	20	16	16	34	41	63	68
Egypt, Arab Rep.	43	29	8	32	20	22	10	7	32	39	56	37
El Salvador	56	50	9	7	20	22	18	19	24	29	73	74
Eritrea	79	77	88	85	7	8	2	2	14	16	11	13
Estonia	19	18	12	11	50	48	36	34	31	34	52	55
Ethiopia	90	86	89	86	2	2	2	2	8	11	10	12
Finland	12	10	9	5	42	38	21	14	38	49	64	66
France	9	6	7	5	43	38	22	17	48	56	71	79
Gabon	59	46	74	59	18	21	5	10	24	33	21	32
Gambia, The	78	74	93	92	10	12	2	3	13	15	5	6
Georgia	31	27	34	24	32	38	21	23	37	34	45	52
Germany	6	4	8	4	54	48	33	24	40	48	59	72
Ghana	66	64	57	55	12	12	14	14	22	25	29	31
Greece	*25*	19	*39*	23	*34*	32	*18*	17	*40*	47	*39*	51
Guatemala	65	64	17	16	17	16	27	23	19	21	56	61
Guinea	86	83	96	92	2	3	1	1	12	15	3	7
Guinea-Bissau	81	78	98	96	3	3	0	0	17	19	2	3
Haiti	79	76	61	57	8	9	8	8	13	15	31	35
Honduras	63	51	40	..	17	19	..	26	20	27	51	64

Employment by economic activity 2.4

	Agriculture				Industry				Services			
	Male % of male labor force		Female % of female labor force		Male % of male labor force		Female % of female labor force		Male % of male labor force		Female % of female labor force	
	1980	1990–97[a]	1980	1990–97[a]	1980	1990–97[a]	1980	1990–97[a]	1980	1990–97[a]	1980	1990–97[a]
Hungary	21	19	15	11	48	42	38	32	32	39	47	57
India	63	59	83	74	15	17	9	15	22	24	8	11
Indonesia	59	39	56	40	12	20	12	15	29	37	32	39
Iran, Islamic Rep.	36	30	82	73	28	26	6	9	35	44	12	18
Iraq	22	12	62	39	24	19	11	9	55	69	27	52
Ireland	*23*	16	*6*	3	*33*	28	*21*	16	*35*	39	*66*	69
Israel	7	4	4	2	39	37	15	15	51	55	77	77
Italy	11	7	14	7	40	35	24	18	40	49	48	59
Jamaica	43	34	18	15	23	32	9	13	35	34	73	72
Japan	9	5	13	6	39	38	28	23	50	54	57	67
Jordan	11	10	58	41	27	28	3	4	62	63	39	55
Kazakhstan	28	28	20	15	38	37	25	25	34	35	55	60
Kenya	77	75	88	85	10	11	2	3	13	15	10	12
Korea, Dem. Rep.	39	35	52	42	37	38	20	23	24	27	28	35
Korea, Rep.	29	12	38	16	30	38	23	24	35	47	36	59
Kuwait	2	2	0	0	36	32	3	2	62	67	97	98
Kyrgyz Republic	35	36	33	28	34	30	23	23	32	34	44	50
Lao PDR	77	76	82	81	7	7	4	5	16	17	13	14
Latvia	18	19	14	12	49	47	36	33	32	34	50	55
Lebanon	13	6	20	10	29	34	21	22	58	60	59	68
Lesotho	26	29	64	59	52	41	5	5	22	30	31	36
Libya	16	7	63	28	29	27	3	5	55	66	34	68
Lithuania	26	23	29	13	47	47	30	34	27	30	41	53
Macedonia, FYR	30	21	47	23	38	40	23	41	32	39	30	36
Madagascar	73	70	93	88	9	10	2	3	19	20	5	9
Malawi	78	78	96	96	10	9	1	1	12	13	3	3
Malaysia	36	28	49	26	19	23	18	23	44	48	33	52
Mali	86	83	92	89	2	2	1	2	12	15	7	9
Mauritania	65	49	79	63	11	16	2	4	25	35	19	34
Mauritius	27	18	27	14	28	40	27	50	45	42	46	36
Mexico	43	35	19	12	30	25	28	20	28	40	53	69
Moldova	46	38	41	28	30	34	23	26	25	28	36	47
Mongolia	43	34	36	30	21	23	21	22	36	44	43	48
Morocco	48	35	72	63	23	28	14	19	29	37	14	18
Mozambique	72	70	97	96	14	15	1	1	14	15	2	3
Myanmar	72	70	80	78	9	11	7	9	19	19	12	14
Namibia	52	46	64	54	22	21	5	8	27	33	31	39
Nepal	91	91	98	98	1	0	0	0	8	9	2	2
Netherlands	*6*	5	*2*	2	*36*	30	*12*	9	*50*	58	*74*	78
New Zealand	13	10	7	5	39	30	21	12	48	52	72	76
Nicaragua	49	38	16	9	26	28	21	23	26	34	64	69
Niger	86	84	98	97	5	6	1	1	9	10	1	1
Nigeria	52	43	57	44	10	9	5	3	38	49	38	53
Norway	10	7	6	3	40	33	14	10	50	57	80	85
Oman	52	48	25	20	21	22	33	35	27	30	42	45
Pakistan	56	44	73	65	15	18	12	10	29	34	15	15
Panama	*35*	30	*5*	3	*21*	21	*11*	10	*38*	46	*77*	80
Papua New Guinea	76	73	92	89	8	9	2	3	16	18	6	8
Paraguay	58	51	9	8	20	23	22	20	23	26	70	72
Peru	45	41	25	22	20	20	14	12	35	26	61	72
Philippines	61	44	37	26	15	18	16	12	25	31	47	54
Poland	28	27	32	28	46	45	28	25	26	28	40	48
Portugal	21	10	31	12	41	40	24	24	32	49	37	59
Puerto Rico	8	6	1	0	30	29	26	22	24	27	74	75
Romania	26	21	45	28	50	53	30	40	24	26	25	32
Russian Federation	19	17	13	10	50	48	37	35	31	34	50	56

2.4 Employment by economic activity

	Agriculture				Industry				Services			
	Male % of male labor force		Female % of female labor force		Male % of male labor force		Female % of female labor force		Male % of male labor force		Female % of female labor force	
	1980	**1990–97[a]**	**1980**	**1990–97[a]**	**1980**	**1990–97[a]**	**1980**	**1990–97[a]**	**1980**	**1990–97[a]**	**1980**	**1990–97[a]**
Rwanda	88	86	98	98	5	6	1	1	7	8	1	2
Saudi Arabia	45	20	25	12	17	21	5	6	39	59	70	82
Senegal	74	70	90	86	9	10	2	4	17	20	8	11
Sierra Leone	63	60	82	81	20	22	4	4	17	18	14	16
Singapore	2	0	1	0	32	35	39	30	63	62	57	68
Slovak Republic	15	14	13	9	38	36	34	31	48	50	54	60
Slovenia	14	5	17	6	49	52	37	39	38	43	46	54
South Africa	18	16	16	10	45	42	16	15	37	42	68	76
Spain	19	11	16	7	42	39	21	14	36	46	56	65
Sri Lanka	*41*	36	*44*	32	*16*	18	*12*	17	*26*	37	*21*	21
Sudan	66	64	88	84	9	10	4	5	24	26	8	11
Sweden	8	5	3	2	45	34	16	11	46	52	79	81
Switzerland	..	6	..	4	..	42	..	19	..	49	..	74
Syrian Arab Republic	27	22	78	69	35	30	7	6	39	49	15	25
Tajikistan	36	37	54	46	29	28	16	17	35	35	30	37
Tanzania	80	78	92	91	7	8	2	2	13	14	7	7
Thailand	..	55	..	61	..	20	..	19	..	26	..	29
Togo	70	66	67	65	12	12	7	7	19	22	26	29
Trinidad and Tobago	..	11	..	4	..	29	..	10	..	47	..	65
Tunisia	33	23	53	42	30	33	32	32	37	44	16	27
Turkey	45	29	88	59	22	27	5	12	33	38	8	19
Turkmenistan	33	34	46	41	32	30	16	14	36	36	38	44
Uganda	84	81	91	88	6	7	2	2	10	12	8	10
Ukraine	26	24	24	16	46	46	33	34	28	31	44	50
United Arab Emirates	5	9	0	0	40	30	7	3	55	61	93	98
United Kingdom	3	3	1	1	44	32	21	13	44	51	72	80
United States	5	4	2	1	*35*	32	15	13	*50*	60	*74*	81
Uruguay	22	21	4	4	31	31	23	21	47	48	74	70
Uzbekistan	35	35	46	36	34	30	19	19	32	35	36	45
Venezuela	19	19	3	2	32	25	19	13	48	48	76	75
Vietnam	71	70	75	73	16	17	10	11	13	13	15	16
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	60	50	98	88	19	22	1	6	21	29	1	7
Yugoslavia, FR (Serb./Mont.)	34	28	47	32	35	38	19	26	31	34	33	41
Zambia	69	68	85	83	13	13	3	3	19	19	13	14
Zimbabwe	63	58	85	81	19	13	4	2	18	29	12	17
World	**50 w**	**46 w**	**56 w**	**52 w**	**22 w**	**22 w**	**15 w**	**15 w**	**25 w**	**29 w**	**24 w**	**29 w**
Low income	65	61	81	75	13	15	8	10	22	25	11	14
Middle income	55	50	59	56	23	23	17	17	22	26	24	27
Lower middle income	59	56	63	61	21	21	16	16	20	22	20	22
Upper middle income	34	27	31	22	32	31	20	17	33	42	49	61
Low & middle income	59	54	67	62	19	20	14	15	22	25	19	23
East Asia & Pacific	69	66	75	72	15	16	12	13	16	17	13	14
Europe & Central Asia	26	24	27	22	44	42	31	30	30	34	42	48
Latin America & Carib.	39	29	21	12	28	28	18	16	32	42	61	70
Middle East & N. Africa	37	27	53	55	25	26	10	11	36	46	29	29
South Asia	63	59	82	75	14	17	10	14	23	25	8	10
Sub-Saharan Africa	66	62	79	75	12	12	4	4	22	26	17	21
High income	8	5	8	4	..	34	22	17	..	53	..	73
Europe EMU	10	8	11	6	46	40	26	19	41	50	59	69

a. Data are for the most recent year available.

Employment by economic activity 2.4

About the data

The International Labour Organisation (ILO) classifies economic activity on the basis of the International Standard Industrial Classification (ISIC) of All Economic Activities. Because this classification is based on where work is performed (industry) rather than on the type of work performed (occupation), all of an enterprise's employees are classified under the same industry, regardless of their trade or occupation. The categories should add up to 100 percent. Where they do not, the differences arise because of people who are not classifiable by economic activity.

Data on employment are drawn from labor force surveys, enterprise censuses and surveys, administrative records of social insurance schemes, and official national estimates. The concept of employment generally refers to people above a certain age who worked, or who held a job, during a reference period. Employment data include both full-time and part-time workers. There are, however, many differences in how countries define and measure employment status, particularly for part-time workers, students, members of the armed forces, and household workers. Countries also take very different approaches to the treatment of unemployed people. In most countries unemployed people with previous job experience are classified according to their last job. But in some countries the unemployed and people seeking their first job are not classifiable by economic activity. Because of these differences, the size and distribution of employment by economic activity may not be fully comparable across countries (ILO, *Yearbook of Labour Statistics 1996*, p. 64).

The ILO's *Yearbook of Labour Statistics* reports data by major divisions of the ISIC revision 2 or tabulation categories of the ISIC revision 3. In this table the reported divisions or categories are aggregated into three broad groups: agriculture, industry, and services. An increasing number of countries report economic activity according to the ISIC. Where data are supplied according to national classifications, however, industry definitions and descriptions may differ. In addition, classification into broad groups may obscure fundamental differences in countries' industrial patterns. The distribution of economic activity by gender reveals some interesting patterns. Agriculture accounts for the largest share of female employment in much of Africa and Asia. Services account for much of the increase in women's labor force participation in North Africa, Latin America and the Caribbean, and high-income economies. Worldwide, women are underrepresented in industry.

Segregating one sex in a narrow range of occupations significantly reduces economic efficiency by reducing labor market flexibility and the economy's ability to adapt to change. This segregation is particularly harmful for women, who have a much narrower range of labor market choices and lower levels of pay than men. But it is also detrimental to men when job losses are concentrated in industries dominated by men and job growth is centered in service occupations, where women often dominate, as has been the recent experience in many countries.

There are several explanations for the rising importance of service jobs for women. Many service jobs—such as nursing and social and clerical work—are considered "feminine" because of a perceived similarity with women's traditional roles. Women often do not receive the training needed to take advantage of changing employment opportunities. And the greater availability of part-time work in service industries may lure more women, although it is not clear whether this is a cause or an effect (United Nations 1991).

Table 2.4a

Nonagricultural labor force working in gender-dominated occupations
%

Country group	Women in female-dominated occupations	Men in male-dominated occupations
OECD	27	56
Transition economies	27	54
Middle East & N. Africa	10	84
East Asia & Pacific	10	56
Other developing	48	64

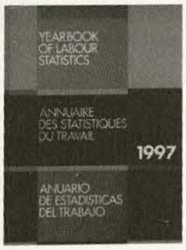
Note: Gender-dominated occupations are those in which at least 80 percent of workers are of one sex. The underlying country data are for various years between 1981 and 1991.
Source: Anker 1998.

Labor force participation data using detailed occupational classifications show significant segmentation by gender in both industrial and developing countries. Typical male occupations are managers, architects, engineers and related workers, production supervisors, and legislative and government administrators. Typical female occupations are clustered in a narrow range, primarily in teaching and medical professions and in domestic work. Overcoming this segmentation could be an important step in promoting gender equality and creating a more flexible and responsive labor market.

Definitions

- **Agriculture** includes hunting, forestry, and fishing, corresponding to major division 1 (ISIC revision 2) or tabulation categories A and B (ISIC revision 3). • **Industry** includes mining and quarrying (including oil production), manufacturing, electricity, gas and water, and construction, corresponding to major divisions 2–5 (ISIC revision 2) or tabulation categories C–F (ISIC revision 3). • **Services** include wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services, corresponding to major divisions 6–9 (ISIC revision 2) or tabulation categories G–P (ISIC revision 3).

Data sources


YEARBOOK OF LABOUR STATISTICS
ANNUAIRE DES STATISTIQUES DU TRAVAIL
1997
ANUARIO DE ESTADÍSTICAS DEL TRABAJO

Employment data are compiled by the World Bank's Development Data Group using an ILO database corresponding to table 2a in its *Yearbook of Labour Statistics.*

2.5 Unemployment

	Male unemployment			Female unemployment			Total unemployment		
	% of male labor force			% of female labor force			% of total labor force		
	1980	1990	1997	1980	1990	1997	1980	1990	1997
Albania	..	..	..	..	..	..	5.6	10.0	..
Algeria	..	*21.7*	26.9	..	*17.0*	24.0	..	19.7	26.4
Angola	..	..	..	..	..	..	..	..	..
Argentina	..	..	*15.4*	..	..	*17.6*	..	*6.3*	*16.3*
Armenia	..	..	..	..	..	..	..	*1.6*	*9.3*
Australia	5.1	6.7	8.8	7.9	7.2	8.3	6.1	6.9	8.4
Austria	..	3.0	3.9	..	3.6	4.6	..	3.2	6.4
Azerbaijan	..	..	..	..	..	..	..	*0.1*	*1.1*
Bangladesh	..	..	..	..	..	..	..	..	..
Belarus	..	..	..	..	..	..	..	*0.1*	*3.9*
Belgium	..	4.5	*7.4*	..	11.4	*12.8*	..	7.2	12.7
Benin	..	..	..	..	..	..	..	..	..
Bolivia	..	6.9	*3.7*	..	7.8	*4.5*	..	7.3	*4.2*
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..
Botswana	..	..	*19.4*	..	..	*23.9*	..	..	*21.5*
Brazil	*4.2*	3.8	*5.7*	*4.4*	3.4	*8.8*	*4.3*	3.7	*6.9*
Bulgaria	..	..	..	..	..	..	..	11.5	*11.1*
Burkina Faso	..	..	..	..	..	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..
Cameroon	..	..	..	..	..	..	..	..	..
Canada	..	8.1	9.2	..	8.1	9.2	..	8.1	9.4
Central African Republic	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..
Chile	10.6	5.7	4.7	10.0	5.7	6.6	10.4	5.6	5.3
China	..	0.9	..	..	1.2	..	4.9	2.5	3.0
Hong Kong, China	3.9	1.3	2.3	3.4	1.3	2.0	3.8	1.3	2.2
Colombia	7.5	8.1	9.8	11.5	13.2	15.1	9.1	10.2	12.1
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..
Congo, Rep.	..	..	..	..	..	..	..	..	..
Costa Rica	5.3	4.2	4.9	7.8	5.9	7.5	5.9	4.6	5.7
Côte d'Ivoire	..	..	..	..	..	..	..	..	..
Croatia	..	..	..	..	..	..	..	9.3	*15.9*
Cuba	..	..	..	..	..	..	..	..	..
Czech Republic	..	..	..	..	..	..	..	0.3	*3.1*
Denmark	..	..	4.9	..	..	7.6	..	..	8.1
Dominican Republic	..	*12.5*	9.5	..	*33.1*	28.6	..	*19.7*	15.9
Ecuador	..	4.3	7.0	..	9.1	12.7	..	6.1	9.2
Egypt, Arab Rep.	3.9	5.2	*7.6*	19.2	17.9	*24.1*	5.2	8.6	*11.3*
El Salvador	..	10.1	9.5	..	9.8	5.3	12.9	10.0	8.0
Eritrea	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..	*2.1*
Ethiopia	..	..	..	..	..	..	..	..	..
Finland	4.7	4.0	14.0	4.7	2.8	15.0	4.7	3.4	14.7
France	4.3	6.7	11.0	9.5	11.7	14.3	6.4	8.9	12.6
Gabon	..	..	..	..	..	..	..	..	..
Gambia, The	..	..	..	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	*0.2*	*2.8*
Germany	..	*6.0*	9.2	..	*8.8*	10.6	..	*7.2*	11.1
Ghana	..	..	..	..	..	..	..	..	..
Greece	*3.3*	4.3	6.6	*5.7*	11.7	15.9	*4.0*	7.0	10.4
Guatemala	..	..	..	..	..	..	..	..	..
Guinea	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..
Haiti	..	..	..	..	..	..	..	..	..
Honduras	*8.6*	4.4	2.1	*6.0*	6.2	1.1	*7.3*	4.8	3.2

Unemployment 2.5

	Male unemployment % of male labor force			Female unemployment % of female labor force			Total unemployment % of total labor force		
	1980	**1990**	**1997**	**1980**	**1990**	**1997**	**1980**	**1990**	**1997**
Hungary	..	..	..	..	..	..	..	0.8	*10.5*
India	..	..	..	..	..	..	..	..	..
Indonesia	..	..	..	..	..	..	..	..	..
Iran, Islamic Rep.	..	..	..	..	..	..	..	..	..
Iraq	..	..	..	..	..	..	..	..	..
Ireland	..	12.5	10.4	..	13.8	10.3	..	12.9	10.8
Israel	4.1	8.4	6.8	6.0	11.3	8.8	4.8	9.6	7.7
Italy	4.8	7.3	9.5	13.1	17.1	16.8	7.6	11.0	12.1
Jamaica	16.3	9.3	..	39.6	23.1	..	27.3	15.7	..
Japan	2.0	2.0	3.4	2.0	2.2	3.4	2.0	2.1	3.2
Jordan	..	..	..	..	..	..	..	..	..
Kazakhstan	..	..	..	..	..	..	..	*0.5*	*3.6*
Kenya	..	..	..	..	..	..	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..
Korea, Rep.	6.2	2.9	2.8	3.5	1.8	2.3	5.2	2.4	2.7
Kuwait	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	..	..	..	..	..	..	..	*0.0*	*4.4*
Lao PDR	..	..	..	..	..	..	..	..	..
Latvia	..	..	..	..	..	..	..	*0.9*	*7.0*
Lebanon	..	..	..	..	..	..	..	..	..
Lesotho	..	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..
Lithuania	..	..	..	..	..	..	..	*0.3*	*7.1*
Macedonia, FYR	..	..	..	..	..	..	..	23.0	*38.8*
Madagascar	..	..	..	..	..	..	..	..	..
Malawi	..	..	..	..	..	..	..	..	..
Malaysia	..	..	..	..	..	..	..	5.1	2.5
Mali	..	..	..	..	..	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..
Mauritius	..	..	*7.8*	..	..	*13.9*	..	..	*9.8*
Mexico	..	*1.7*	2.3	..	*3.4*	3.6	..	*2.2*	4.5
Moldova	..	..	..	..	..	..	..	*0.1*	*1.6*
Mongolia	..	..	..	..	..	..	..	..	..
Morocco	..	13.9	*15.8*	..	19.6	*23.0*	..	15.4	*17.8*
Mozambique	..	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	..
Namibia	..	..	..	..	..	..	..	..	..
Nepal	..	..	..	..	..	..	..	..	..
Netherlands	*6.3*	5.4	4.5	*13.4*	10.7	7.0	*7.9*	7.5	6.2
New Zealand	..	8.1	6.6	..	7.2	6.7	..	7.8	6.0
Nicaragua	..	9.0	12.6	..	15.4	14.8	..	11.1	13.3
Niger	..	..	..	..	..	..	..	..	..
Nigeria	..	..	..	..	..	..	..	..	..
Norway	1.3	5.6	4.0	2.3	4.8	4.2	1.7	5.2	4.5
Oman	..	..	..	..	..	..	..	..	..
Pakistan	3.0	3.4	*4.1*	7.5	0.9	*13.7*	3.6	3.1	*5.4*
Panama	*6.3*	*12.6*	10.7	*13.3*	*22.6*	18.1	*8.4*	*16.2*	13.4
Papua New Guinea	..	..	..	..	..	..	..	..	..
Paraguay	3.8	6.6	*7.8*	4.8	6.5	*8.6*	4.1	6.6	*8.2*
Peru	..	..	6.8	..	..	8.9	..	..	7.7
Philippines	3.2	7.1	7.5	7.5	9.8	8.5	4.8	8.1	7.9
Poland	..	..	..	..	..	..	..	6.1	*13.6*
Portugal	4.1	3.2	*6.4*	13.0	6.6	*8.2*	7.8	4.7	7.1
Puerto Rico	19.5	16.2	14.4	12.3	10.7	12.1	17.1	14.1	13.5
Romania	..	..	..	..	..	..	..	*3.0*	*6.3*
Russian Federation	..	..	..	..	..	..	..	*0.1*	*3.4*

2.5 Unemployment

	Male unemployment			Female unemployment			Total unemployment		
	% of male labor force			% of female labor force			% of total labor force		
	1980	1990	1997	1980	1990	1997	1980	1990	1997
Rwanda	..	..	..	..	..	..	..	..	..
Saudi Arabia	..	..	..	..	..	..	..	..	..
Senegal	..	..	..	..	..	..	..	..	..
Sierra Leone	..	..	..	..	..	..	..	..	..
Singapore	2.9	1.9	2.4	3.4	1.3	2.4	3.0	1.7	2.4
Slovak Republic	..	..	..	..	..	..	..	0.6	*12.6*
Slovenia	..	..	..	..	..	..	..	4.7	*13.9*
South Africa	..	..	..	..	..	..	..	..	..
Spain	10.8	12.0	16.1	12.8	24.2	28.3	11.4	16.3	22.1
Sri Lanka	..	9.1	*8.0*	..	23.5	*17.6*	..	14.4	*11.3*
Sudan	..	..	..	..	..	..	..	..	..
Sweden	1.7	1.7	*8.5*	2.3	1.6	*7.5*	2.0	1.6	8.1
Switzerland	..	*1.2*	4.4	..	*2.5*	4.0	..	*1.8*	5.4
Syrian Arab Republic	..	*5.2*	..	..	*14.0*	..	..	*6.8*	..
Tajikistan	..	..	..	..	..	..	..	*0.3*	*2.1*
Tanzania	..	..	..	..	..	..	..	..	..
Thailand	1.0	2.1	0.9	0.7	2.4	0.9	0.8	2.2	0.9
Togo	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	8.0	17.8	*13.2*	14.0	24.2	*21.0*	10.0	20.0	*16.2*
Tunisia	..	..	..	..	..	..	..	..	..
Turkey	*9.0*	7.5	6.1	*23.0*	7.5	9.2	*10.9*	7.5	6.6
Turkmenistan	..	..	..	..	..	..	..	2.0	..
Uganda	..	..	..	..	..	..	..	..	..
Ukraine	..	..	..	..	..	..	..	*0.3*	*1.5*
United Arab Emirates	..	..	..	..	..	..	..	..	..
United Kingdom	..	7.1	8.1	..	6.5	5.8	..	6.8	6.1
United States	6.8	5.7	4.9	7.4	5.5	5.0	7.0	5.6	5.0
Uruguay	..	6.9	*8.0*	..	10.9	*13.2*	..	8.5	*10.2*
Uzbekistan	..	..	..	..	..	..	..	*0.1*	*0.3*
Venezuela	..	10.9	*9.0*	..	9.3	*12.8*	5.9	10.4	*10.3*
Vietnam	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	19.7	*25.7*
Zambia	..	..	..	..	..	..	..	..	..
Zimbabwe	..	..	..	..	..	..	..	..	..

Unemployment 2.5

About the data

The International Labour Organisation (ILO) defines the unemployed as members of the economically active population who are without work but available for and seeking work, including people who have lost their jobs and those who have voluntarily left work. Some unemployment is unavoidable in all economies. At any time some workers are temporarily unemployed—between jobs as employers look for the right workers and workers search for better jobs. Such unemployment, often called frictional unemployment, results from the normal operation of labor markets. Changes in unemployment over time may reflect changes in the demand for and supply of labor, but they may also reflect changes in reporting practices. High and sustained unemployment, however, indicates serious inefficiencies in the allocation of resources.

The ILO definition of unemployment notwithstanding, reference periods, criteria for seeking work, and the treatment of people temporarily laid off and those seeking work for the first time vary across countries. In many developing countries it is especially difficult to measure employment and unemployment in agriculture. The timing of a survey, for example, can maximize the seasonal effects of agricultural unemployment. And informal sector employment is difficult to quantify in the absence of regulation for registering and tracking informal activities.

Data on unemployment are drawn from labor force sample surveys and general household sample surveys, social insurance statistics, employment office statistics, and official estimates, which are usually based on combined information drawn from one or more of the above sources. Labor force surveys generally yield the most comprehensive data because they include groups—particularly people seeking work for the first time—not covered in other unemployment statistics. These surveys generally use a definition of unemployment that follows the international recommendations more closely than that used by other sources, and generates statistics that are more comparable internationally.

By contrast, the quality and completeness of data obtained from employment offices and social insurance programs vary widely. Where employment offices work closely with social insurance schemes, and registration with such offices is a prerequisite for receipt of unemployment benefits, the two sets of unemployment estimates tend to be comparable. Where registration is voluntary, and where employment offices function only in more populous areas, employment office statistics do not give a reliable indication of unemployment. The most common exclusion from both these sources is discouraged workers who have given up their job search because they believe that no employment opportunities exist or do not register as unemployed after their benefits have been exhausted. Thus measured unemployment may be higher in economies that offer more or longer unemployment benefits.

Economies for which unemployment data are not consistently available or were deemed unreliable have been omitted from the table.

Table 2.5a

Countries by type of social security program, selected years

Type of program	1940	1949	1958	1967	1977	1987	1997
Any	57	58	80	120	129	141	171
Unemployment	21	22	26	34	38	40	68

Source: U.S. Department of Health and Human Services 1997.

Unemployment is seen as a policy concern because it deprives workers and their families of labor income—decreasing their current consumption and welfare—and deprives the economy of the unemployed workers' contributions to output. Yet unemployment benefits remain among the most controversial social policies, and only a minority of countries that have some type of social security program also have an unemployment benefit scheme. Empirical evidence generally confirms the positive relationship between the generosity of benefits and the unemployment rate, resulting primarily from the effect of reduced pressure for reemployment on the duration of unemployment.

Definitions

- **Unemployment** is the share of the labor force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country (see *About the data*).

Data sources

YEARBOOK OF LABOUR STATISTICS
ANNUAIRE DES STATISTIQUES DU TRAVAIL
1997
ANUARIO DE ESTADISTICAS DEL TRABAJO

Unemployment data are from an ILO database corresponding to table 3a in the ILO's *Yearbook of Labour Statistics*, the Organisation for Economic Co-operation and Development's (OECD) *Employment Outlook* (1997b), the UNICED-ICDC TransMONEE database, the World Bank's Social Challenges of Transition database, and country statistical sources.

2.6 Wages and productivity

	Average hours worked per week		Minimum wage $ per year		Agricultural wage $ per year		Labor cost per worker in manufacturing $ per year		Value added per worker in manufacturing $ per year	
	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94
Albania	..	..	..	..	..	..	..	..	..	..
Algeria	..	44	..	..	..	..	6,242	..	11,306	..
Angola	..	..	..	..	..	..	..	..	..	..
Argentina	41	40	..	..	..	..	6,768	7,338	33,694	37,480
Armenia	..	..	..	..	..	..	..	..	..	..
Australia	34	36	..	12,712	11,212	15,124	14,749	26,087[b]	27,801	57,857
Austria	..	32	..	[a]	..	..	11,949	34,674[b]	20,956	53,061
Azerbaijan	..	..	..	..	..	..	14,613	..	26,778	..
Bangladesh	48	50	..	492	240	..	556	671	1,820	1,711
Belarus	..	..	..	..	..	..	..	..	..	..
Belgium	34	37	7,661	15,882[b]	6,399		12,805	28,735[b]	25,579	58,678
Benin	..	..	..	..	..	..	..	..	..	..
Bolivia	..	47[c]	..	420	..	..	4,432	2,343	21,519	26,282
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	..	..	..	..	650	1,223	3,250	..	7,791	..
Brazil	..	40	..	688	..	..	10,080	14,134	43,232	61,595
Bulgaria	..	..	..	..	..	1,372	..	1,179	..	..
Burkina Faso	..	..	695	891	..	..	3,282	..	15,886	..
Burundi	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	..	..	..	..	..	..	..	..
Canada	32	33	4,974	7,897[b]	20,429	30,625	17,710	28,346[b]	36,903	60,712
Central African Republic	..	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..
Chile	43	45	..	1,098	..	..	6,234	5,822	32,805	32,977
China	..	..	..	..	349	325	472	434[d]	3,061	2,885
Hong Kong, China	48	46	..	..	..	..	4,127	13,539[b]	7,886	19,533
Colombia	..	..	..	1,128	..	..	2,988	2,507	15,096	17,061
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	..	..	..	..	..	..	..	..	..	..
Costa Rica	..	47	..	1,638	982	1,697	1,788	2,645	7,185	7,184
Côte d'Ivoire	..	..	1,247	872[b]	..	..	5,136	9,995[d]	16,158	..
Croatia	..	..	..	..	..	..	..	..	..	..
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	..	..	..	..	..	..	..	..	..
Denmark	..	37	9,170	19,933[b]	..	..	16,169	35,615[b]	27,919	49,273
Dominican Republic	44	44	..	1,439	..	..	2,191	..	8,603	..
Ecuador	..	..	..	492	..	..	5,065	3,738	12,197	9,747
Egypt, Arab Rep.	58	..	..	367	..	..	2,210	1,863	3,691	5,976
El Salvador	..	..	..	790	..	..	3,654	..	14,423	..
Eritrea	..	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..	..	..
Ethiopia	..	..	..	..	..	..	..	1,596	..	7,094
Finland	..	38	..	[a]	..	..	11,522	31,330[b]	25,945	55,037
France	39	39	10,815	22,955[b]	..	..	16,060	38,900[b]	26,751	61,019[e]
Gabon	..	..	..	..	..	..	..	..	..	..
Gambia, The	..	..	..	..	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..
Germany	41	40	[a]	[a]	..	..	21,846[d]	63,956[b,d]	..	..
Ghana	..	..	..	..	1,470	..	2,306	..	12,130	..
Greece	..	41	..	5,246	..	..	6,461	15,899[b]	14,561	30,429
Guatemala	..	..	..	459	..	..	2,605	1,802	11,144	9,235
Guinea	40	..	..	..	..	..	..	..	..	..
Guinea-Bissau	48	..	..	..	..	..	..	..	..	..
Haiti	..	..	..	..	..	..	..	..	..	..
Honduras	..	44	..	..	1,623	..	2,949	2,658	7,458	7,427

Wages and productivity 2.6

	Average hours worked per week		Minimum wage		Agricultural wage		Labor cost per worker in manufacturing		Value added per worker in manufacturing	
			$ per year		$ per year		$ per year		$ per year	
	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94
Hungary	35	33	..	1,132[b]	1,186	1,766	1,410	2,777	4,307	6,106
India	48	48	..	408	..	..	1,035	1,192	2,108	3,118
Indonesia	..	..	..	241	..	..	898	1,008	3,807	5,139
Iran, Islamic Rep.	..	..	..	..	..	..	9,737	30,562	17,679	89,787
Iraq	..	..	..	..	..	..	4,624	13,288	13,599	34,316
Ireland	41[c]	41[c]	..	..	..	..	10,190	25,414[b]	26,510	86,036
Israel	36	36	..	5,861	4,582	7,906	13,541	26,635[b]	23,459	35,526
Italy	..	32	..	[a]	..	..	15,895	35,138[b]	..	..
Jamaica	..	39	782	692	..	..	5,218	..	12,056	11,091
Japan	47	46	3,920	8,327[b]	..	..	12,306	40,104[b]	34,456	92,582
Jordan	..	..	..	..	..	..	4,643	3,125	16,337	11,906
Kazakhstan	..	..	..	..	..	..	..	..	..	..
Kenya	41	39	..	..	508	568	1,040	940	2,340	2,280
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	52	48	..	3,903[b]	..	..	3,153	15,819[b]	11,617	40,916
Kuwait	..	..	..	8,244	..	..	10,281	..	30,341	..
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..
Latvia	..	..	..	..	..	..	..	366	..	..
Lebanon	..	..	..	..	..	..	..	..	..	..
Lesotho	..	45	..	..	..	..	1,442	..	6,047	..
Libya	..	..	..	..	..	..	8,648	..	21,119	..
Lithuania	..	..	..	..	..	..	..	..	..	..
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..
Madagascar	..	40	..	..	..	..	1,575	..	3,542	..
Malawi	..	..	..	..	..	..	..	..	..	..
Malaysia	..	..	..	[a]	..	..	2,519	3,429	8,454	12,661
Mali	..	..	321	459	..	..	2,983	..	10,477	..
Mauritania	..	..	..	..	..	..	..	..	..	..
Mauritius	..	..	..	..	..	..	1,465	1,973	2,969	4,217
Mexico	..	34	1,002	843	1,031	908	3,772	6,138	17,448	25,991
Moldova	..	..	..	..	..	..	..	..	..	..
Mongolia	..	..	..	..	..	..	..	..	..	..
Morocco	..	..	..	1,672	..	..	2,583	3,391	6,328	9,089
Mozambique	..	..	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	..	..
Namibia	..	..	..	..	..	..	..	..	..	..
Nepal	..	..	..	..	..	..	371	..	1,523	..
Netherlands	40	39	9,074	15,170[b]	..	..	18,891	39,865[b]	27,491	56,801
New Zealand	39	39	3,309	9,091[b]	..	..	10,605	23,767[b]	16,835	32,723
Nicaragua	..	44	..	..	..	..	..	..	..	..
Niger	40	..	..	..	..	..	4,074	..	22,477	..
Nigeria	..	..	..	300	..	..	4,812	..	20,000	..
Norway	35	35	..	[a]	..	..	14,935	38,415[b]	24,905	51,510
Oman	..	..	..	..	..	..	..	3,099	..	61,422
Pakistan	48	..	..	600	..	..	1,264	..	6,214	..
Panama	..	..	..	..	..	..	4,768	6,351	15,327	17,320
Papua New Guinea	44	..	..	..	..	..	4,825	..	13,563	..
Paraguay	36	39	..	..	1,606	1,210	2,509[d]	3,241	..	14,873
Peru	48	..	..	..	..	944	2,988	..	15,962	..
Philippines	..	43	..	1,067	380	..	1,240	2,459	5,266	9,339
Poland	..	..	..	1,584[b]	1,754	1,197	1,682	1,257	6,242	7,637
Portugal	39	40	1,606	4,086[b]	..	..	3,115	7,577[b]	7,161	17,273
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	..	40	..	..	1,669	1,864	1,739[d]	1,190	..	3,482
Russian Federation	..	..	..	..	..	..	..	..	..	..

2.6 Wages and productivity

	Average hours worked per week		Minimum wage		Agricultural wage		Labor cost per worker in manufacturing		Value added per worker in manufacturing	
			$ per year		$ per year		$ per year		$ per year	
	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94	1980–84	1990–94
Rwanda	..	..	..	..	..	..	1,871	..	9,835	..
Saudi Arabia	..	..	..	..	..	..	9,814	..	..	..
Senegal	..	..	..	..	..	..	2,828	..	6,415	..
Sierra Leone	44	..	..	..	..	..	1,624	..	7,807	..
Singapore	..	46	..	..	..	4,856	5,576	21,534[b]	16,442	40,674
Slovak Republic	..	..	..	..	..	..	..	..	..	..
Slovenia	..	..	..	..	..	..	..	9,632	..	12,536
South Africa	..	42	..	[a]	..	..	6,261	8,475	12,705	16,612
Spain	38	35	3,058	5,882[b]	..	..	8,276	20,585[b]	18,936	47,016
Sri Lanka	50	53	[a]	[a]	198	264	447	717[b]	2,057	3,405
Sudan	..	..	..	..	..	..	..	..	..	..
Sweden	36	37	..	..	9,576	27,098	13,038	29,043[b]	32,308	56,675
Switzerland	44	42	[a]	[a]	..	..	22,734	59,913[b]	..	61,848
Syrian Arab Republic	..	..	..	..	..	..	2,844	4,338	9,607	9,918
Tajikistan	..	..	..	..	..	..	..	..	..	..
Tanzania	..	..	..	..	..	..	1,123	..	3,339	..
Thailand	48	..	..	1,083	..	..	2,305	2,705	11,072	19,946
Togo	..	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	..	40[c]	..	2,974	..	..	..	..	14,008	..
Tunisia	..	42	1,381	1,525	668	968	3,344	..	7,111	..
Turkey	..	48	594	1,254[b]	1,015	2,896	3,582	7,958	13,994	32,961
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uganda	43	..	..	..	..	..	253	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	..	..	..	..	..	..	6,968	..	20,344	..
United Kingdom	42	40	..	[a]	..	..	11,406	26,045[b]	24,716	55,060
United States	35	34	6,006	8,056[b]	..	..	19,103	32,013[b]	47,276	81,353
Uruguay	..	42	1,233	967	1,289	..	4,128	3,738	13,722	16,028
Uzbekistan	..	..	..	..	..	..	..	..	..	..
Venezuela	41	..	..	1,536	..	..	11,188	4,667	37,063	24,867
Vietnam	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	..	45	..	..	..	..	3,183	4,292	11,753	16,615
Zimbabwe	..	..	..	..	1,065	..	4,097	3,422	9,625	11,944

a. Country has sectoral minimum wage but no minimum wage policy. b. Data refer to 1995–99. c. Data refer to hours worked per week in manufacturing. d. Data refer to wage per worker in manufacturing. e. International Labour Organisation data.

Wages and productivity 2.6

About the data

Much of the available data on labor markets are collected through national reporting systems that depend on plant-level surveys. Even when these data are compiled and reported by international agencies such as the International Labour Organisation or the United Nations Industrial Development Organization, differences in definitions, coverage, and units of account limit their comparability across countries. The indicators in this table are the result of a research project at the World Bank that has compiled results from more than 40 national and international sources in an effort to provide a set of uniform and representative labor market indicators. Nevertheless, many differences in reporting practices persist, some of which are described below.

Analyses of labor force participation, employment, and underemployment often rely on the number of hours of work per week. The indicator reported in the table is the time spent at the workplace working, preparing for work, or waiting for work to be supplied or for a machine to be fixed. It also includes the time spent at the workplace when no work is being performed but for which payment is made under a guaranteed work contract or time spent on short periods of rest. Hours paid for but not spent at the place of work, such as paid annual and sick leave, paid holidays, paid meal breaks, and time spent in commuting between home and workplace, are not included, however. When this information is not available, the table reports the number of hours paid for, comprising the hours actually worked plus the hours paid for but not spent in the workplace. Data on hours worked are influenced by differences in methods of compilation and coverage as well as by national practices regarding the number of days worked and overtime, making comparisons across countries difficult.

Wages refer to remuneration in cash and in kind paid to employees at regular intervals, but exclude employers' contributions to social security and pension schemes as well as other benefits received by employees under these schemes. In some countries the national minimum wage represents a "floor," with higher minimum wages for particular occupations and skills set through collective bargaining. In those countries the agreements reached by employers associations and trade unions are extended by the government to all firms in a specific sector, or at least to large firms. In general, changes in the national minimum wage are associated with parallel changes in the minimum wages set through collective bargaining.

In many developing countries agricultural workers are hired on a casual or daily basis and do not enjoy any social security benefits. International comparisons of agricultural wages are subject to greater reservations than those of wages in other activities. The nature of the work carried out by different categories of agricultural workers and the length of the workday and workweek show considerable variation from one country to another. Seasonal fluctuations in agricultural wages are more important in some countries than in others. And the methods followed in different countries for estimating the money value of payments in kind are not uniform.

Labor cost per worker in manufacturing is sometimes used as a measure of international competitiveness. The indicator reported in the table is the ratio of total compensation to the number of workers in the manufacturing sector. Compensation includes direct wages, salaries, and other remuneration paid directly by the employer plus all employers' contributions to social security programs on behalf of their employees. But there are unavoidable differences in concepts and reference periods and in reporting practices. Remuneration for time not worked, bonuses and gratuities, housing allowances, and family allowances should be considered part of the compensation costs, along with severance and termination pay. These indirect labor costs can vary substantially from country to country, depending on the labor laws and collective bargaining agreements in force. Data on labor costs per worker are from plant-level surveys covering relatively large firms, usually employing 10 or more workers and mostly in the formal sector of the economy. Figures are converted into U.S. dollars using the average exchange rate for each year.

International competitiveness also depends on productivity. Value added per worker in manufacturing is a frequently cited measure of productivity. The indicator reported in the table is the ratio of total value added in the manufacturing sector to the number of employees engaged in that sector. Total value added is estimated as the difference between the value of industrial output and the value of materials and supplies for production (including cost of all fuel and purchased electricity) and cost of industrial services received. Data on value added per worker are from plant-level surveys covering relatively large firms, usually employing 10 workers or more and mostly in the formal sector of the economy. Figures are converted into U.S. dollars using the average exchange rate for each year.

The data presented in the table are period averages and refer to workers of both sexes.

Definitions

- **Average hours worked per week** refer to all workers (male and female) in nonagricultural activities or, if unavailable, in manufacturing. The data correspond to hours actually worked, to hours paid for, or to statutory hours of work in a normal workweek. • **Minimum wage** corresponds to the most general regime for nonagricultural activities. When rates vary across sectors, only the one for manufacturing (or commerce, if manufacturing is not available) is reported. • **Agricultural wage** is based on daily wages in agriculture.
- **Labor cost per worker in manufacturing** is obtained by dividing the total payroll by the number of employees, or the number of persons engaged, in manufacturing establishments. • **Value added per worker in manufacturing** is obtained by dividing the value added of manufacturing establishments by the number of employees, or the number of persons engaged, in those establishments.

Data sources

The data in the table are drawn from a forthcoming World Bank working paper by Martin Rama and Raquel Artecona, "A Database of Labor Market Indicators across Countries."

2.7 Poverty

	National poverty line								International poverty line				
		Population below the poverty line				Population below the poverty line							
	Survey year	Rural %	Urban %	National %	Survey year	Rural %	Urban %	National %	Survey year	Population below $1 a day %	Poverty gap at $1 a day %	Population below $2 a day %	Poverty gap at $2 a day %
Albania	1994	28.9	..	..	1996	..	19.6	..		..	..	..	..
Algeria	1988	16.6	7.3	12.2	1995	30.3	14.7	22.6	1995	<2	..	17.6	4.4
Angola		..	..	..		..	..	..		..	..	..	..
Argentina	1991	..	..	25.5		..	..	..		..	..	..	..
Armenia		..	..	..		..	..	..		..	..	..	..
Australia		..	..	..		..	..	..		..	..	..	..
Austria		..	..	..		..	..	..		..	..	..	..
Azerbaijan	1995	..	..	68.1		..	..	..		..	..	..	..
Bangladesh	1991–92	46.0	23.3	42.7	1995–96	39.8	14.3	35.6		..	..	..	..
Belarus	1995	..	..	22.5		..	..	..	1993	<2	..	6.4	0.8
Belgium		..	..	..		..	..	..		..	..	..	..
Benin	1995	..	..	33.0		..	..	..		..	..	..	..
Bolivia		..	..	..		..	..	..		..	..	..	..
Bosnia and Herzegovina		..	..	..		..	..	..		..	..	..	..
Botswana		..	..	..		..	..	..	1985–86	33.0	12.4	61.0	30.4
Brazil	1990	32.6	13.1	17.4		..	..	..	1995	23.6	10.7	43.5	22.4
Bulgaria		..	..	..		..	..	..	1992	2.6	0.8	23.5	6.0
Burkina Faso		..	..	..		..	..	..		..	..	..	..
Burundi	1990	..	..	36.2		..	..	..		..	..	..	..
Cambodia	1993–94	43.1	24.8	39.0	1997	40.1	21.1	36.1		..	..	..	..
Cameroon	1984	32.4	44.4	40.0		..	..	..		..	..	..	..
Canada		..	..	..		..	..	..		..	..	..	..
Central African Republic		..	..	..		..	..	..		..	..	..	..
Chad	1995–96	67.0	63.0	64.0		..	..	..		..	..	..	..
Chile	1992	..	..	21.6	1994	..	..	20.5	1992	15.0	4.9	38.5	16.0
China	1994	11.8	<2	8.4	1996	7.9	<2	6.0	1995	22.2	6.9	57.8	24.1
Hong Kong, China		..	..	..		..	..	..		..	..	..	..
Colombia	1991	29.0	7.8	16.9	1992	31.2	8.0	17.7	1991	7.4	2.3	21.7	8.4
Congo, Dem. Rep.		..	..	..		..	..	..		..	..	..	..
Congo, Rep.		..	..	..		..	..	..		..	..	..	..
Costa Rica		..	..	..		..	..	..	1989	18.9	7.2	43.8	19.4
Côte d'Ivoire		..	..	..		..	..	..	1988	17.7	4.3	54.8	20.4
Croatia		..	..	..		..	..	..		..	..	..	..
Cuba		..	..	..		..	..	..		..	..	..	..
Czech Republic		..	..	..		..	..	..	1993	3.1	0.4	55.1	14.0
Denmark		..	..	..		..	..	..		..	..	..	..
Dominican Republic	1989	27.4	23.3	24.5	1992	29.8	10.9	20.6	1989	19.9	6.0	47.7	20.2
Ecuador	1994	47.0	25.0	35.0		..	..	..	1994	30.4	9.1	65.8	29.6
Egypt, Arab Rep.		..	..	..		..	..	..	1990–91	7.6	1.1	51.9	15.3
El Salvador	1992	55.7	43.1	48.3		..	..	..		..	..	..	..
Eritrea		..	..	..		..	..	..		..	..	..	..
Estonia	1994	14.7	6.8	8.9		..	..	..	1993	6.0	1.6	32.5	10.0
Ethiopia		..	..	..		..	..	..	1981–82	46.0	12.4	89.0	42.7
Finland		..	..	..		..	..	..		..	..	..	..
France		..	..	..		..	..	..		..	..	..	..
Gabon		..	..	..		..	..	..		..	..	..	..
Gambia, The	1992	..	..	64.0		..	..	..		..	..	..	..
Georgia		..	..	..		..	..	..		..	..	..	..
Germany		..	..	..		..	..	..		..	..	..	..
Ghana	1992	34.3	26.7	31.4		..	..	..		..	..	..	..
Greece		..	..	..		..	..	..		..	..	..	..
Guatemala		..	..	..		..	..	..	1989	53.3	28.5	76.8	47.6
Guinea		..	..	..		..	..	..	1991	26.3	12.4	50.2	25.6
Guinea-Bissau	1991	60.9	24.1	48.8		..	..	..	1991	88.2	59.5	96.7	76.6
Haiti	1987	..	..	65.0	1995	81.0	..	..		..	..	..	..
Honduras	1992	46.0	56.0	50.0		..	..	..	1992	46.9	20.4	75.7	41.9

Poverty 2.7

	National poverty line								International poverty line				
		Population below the poverty line				Population below the poverty line							
	Survey year	Rural %	Urban %	National %	Survey year	Rural %	Urban %	National %	Survey year	Population below $1 a day %	Poverty gap at $1 a day %	Population below $2 a day %	Poverty gap at $2 a day %
Hungary	1993	..	..	25.3		..	..	..	1993	<2	..	10.7	2.1
India	1992	43.5	33.7	40.9	1994	36.7	30.5	35.0	1994	47.0	12.9	87.5	42.9
Indonesia	1987	16.4	20.1	17.4	1990	14.3	16.8	15.1	1996	7.7	0.9	50.4	15.3
Iran, Islamic Rep.		..	..	..		..	..	..		..	..	..	..
Iraq		..	..	..		..	..	..		..	..	..	..
Ireland		..	..	..		..	..	..		..	..	..	..
Israel		..	..	..		..	..	..		..	..	..	..
Italy		..	..	..		..	..	..		..	..	..	..
Jamaica	1992	..	..	34.2		..	..	..	1993	4.3	0.5	24.9	7.5
Japan		..	..	..		..	..	..		..	..	..	..
Jordan	1991	..	..	15.0		..	..	..	1992	2.5	0.5	23.5	6.3
Kazakhstan	1996	39.0	30.0	34.6		..	..	..	1993	<2	..	12.1	2.5
Kenya	1992	46.4	29.3	42.0		..	..	..	1992	50.2	22.2	78.1	44.4
Korea, Dem. Rep.		..	..	..		..	..	..		..	..	..	..
Korea, Rep.		..	..	..		..	..	..		..	..	..	..
Kuwait		..	..	..		..	..	..		..	..	..	..
Kyrgyz Republic	1993	48.1	28.7	40.0		..	..	..	1993	18.9	5.0	55.3	21.4
Lao PDR	1993	53.0	24.0	46.1		..	..	..		..	..	..	..
Latvia		..	..	..		..	..	..	1993	<2	..	<2	..
Lebanon		..	..	..		..	..	..		..	..	..	..
Lesotho	1993	53.9	27.8	49.2		..	..	..	1986–87	48.8	23.8	74.1	43.5
Libya		..	..	..		..	..	..		..	..	..	..
Lithuania		..	..	..		..	..	..	1993	<2	..	18.9	4.1
Macedonia, FYR		..	..	..		..	..	..		..	..	..	..
Madagascar		..	..	..		..	..	..	1993	72.3	33.2	93.2	59.6
Malawi	1990–91	..	..	54.0		..	..	..		..	..	..	..
Malaysia	1989	..	..	15.5		..	..	..	1995	4.3	0.7	22.4	6.8
Mali		..	..	..		..	..	..		..	..	..	..
Mauritania	1990	..	..	57.0		..	..	..	1988	31.4	15.2	68.4	33.0
Mauritius	1992	..	..	10.6		..	..	..		..	..	..	..
Mexico	1988	..	..	10.1		..	..	..	1992	14.9	3.8	40.0	15.9
Moldova		..	..	..		..	..	..	1992	6.8	1.2	30.6	9.7
Mongolia	1995	33.1	38.5	36.3		..	..	..		..	..	..	..
Morocco	1984–85	32.6	17.3	26.0	1990–91	18.0	7.6	13.1	1990–91	<2	..	19.6	4.6
Mozambique		..	..	..		..	..	..		..	..	..	..
Myanmar		..	..	..		..	..	..		..	..	..	..
Namibia		..	..	..		..	..	..		..	..	..	..
Nepal	1995–96	44.0	23.0	42.0		..	..	..	1995	50.3	16.2	86.7	44.6
Netherlands		..	..	..		..	..	..		..	..	..	..
New Zealand		..	..	..		..	..	..		..	..	..	..
Nicaragua	1993	76.1	31.9	50.3		..	..	..	1993	43.8	18.0	74.5	39.7
Niger	1989–93	66.0	52.0	63.0		..	..	..	1992	61.5	22.2	92.0	51.8
Nigeria	1985	49.5	31.7	43.0	1992–93	36.4	30.4	34.1	1992–93	31.1	12.9	59.9	29.8
Norway		..	..	..		..	..	..		..	..	..	..
Oman		..	..	..		..	..	..		..	..	..	..
Pakistan	1991	36.9	28.0	34.0		..	..	..	1991	11.6	2.6	57.0	18.6
Panama		..	..	..		..	..	..	1989	25.6	12.6	46.2	24.5
Papua New Guinea		..	..	..		..	..	..		..	..	..	..
Paraguay	1991	28.5	19.7	21.8		..	..	..		..	..	..	..
Peru	1994	67.0	46.1	53.5	1997	64.7	40.4	49.0		..	..	..	..
Philippines	1994	53.1	28.0	40.6	1997	51.2	22.5	37.5	1994	26.9	7.1	62.8	27.0
Poland	1993	..	..	23.8		..	..	..	1993	6.8	4.7	15.1	7.7
Portugal		..	..	..		..	..	..		..	..	..	..
Puerto Rico		..	..	..		..	..	..		..	..	..	..
Romania	1994	27.9	20.4	21.5		..	..	..	1992	17.7	4.2	70.9	24.7
Russian Federation	1994	..	..	30.9		..	..	..	1993	<2	..	10.9	2.3

2.7 Poverty

	National poverty line								International poverty line				
		Population below the poverty line				Population below the poverty line							
	Survey year	Rural %	Urban %	National %	Survey year	Rural %	Urban %	National %	Survey year	Population below $1 a day %	Poverty gap at $1 a day %	Population below $2 a day %	Poverty gap at $2 a day %
Rwanda	1993	..	..	51.2		..	..	..	1983–85	45.7	11.3	88.7	42.3
Saudi Arabia		..	..	..		..	..	..		..	..	..	..
Senegal	1991	40.4	16.4	33.4		..	..	..	1991–92	54.0	25.5	79.6	47.2
Sierra Leone	1989	76.0	53.0	68.0		..	..	..		..	..	..	..
Singapore		..	..	..		..	..	..		..	..	..	..
Slovak Republic		..	..	..		..	..	..	1992	12.8	2.2	85.1	27.5
Slovenia		..	..	..		..	..	..	1993	<2	..	<2	..
South Africa		..	..	..		..	..	..	1993	23.7	6.6	50.2	22.5
Spain		..	..	..		..	..	..		..	..	..	..
Sri Lanka	1985–86	45.5	26.8	40.6	1990–91	38.1	28.4	35.3	1990	4.0	0.7	41.2	11.0
Sudan		..	..	..		..	..	..		..	..	..	..
Sweden		..	..	..		..	..	..		..	..	..	..
Switzerland		..	..	..		..	..	..		..	..	..	..
Syrian Arab Republic		..	..	..		..	..	..		..	..	..	..
Tajikistan		..	..	..		..	..	..		..	..	..	..
Tanzania	1991	..	..	51.1		..	..	..		..	..	..	..
Thailand	1990	..	..	18.0	1992	15.5	10.2	13.1	1992	<2	..	23.5	5.4
Togo	1987–89	..	..	32.3		..	..	..		..	..	..	..
Trinidad and Tobago	1992	..	..	21.0		..	..	..		..	..	..	..
Tunisia	1985	29.2	12.0	19.9	1990	21.6	8.9	14.1	1990	3.9	0.9	22.7	6.8
Turkey		..	..	..		..	..	..		..	..	..	..
Turkmenistan		..	..	..		..	..	..	1993	4.9	0.5	25.8	7.6
Uganda	1993	..	..	55.0		..	..	..	1989–90	69.3	29.1	92.2	56.6
Ukraine	1995	..	..	31.7		..	..	..	1992	<2	..	<2	..
United Arab Emirates		..	..	..		..	..	..		..	..	..	..
United Kingdom		..	..	..		..	..	..		..	..	..	..
United States		..	..	..		..	..	..		..	..	..	..
Uruguay		..	..	..		..	..	..		..	..	..	..
Uzbekistan		..	..	..		..	..	..		..	..	..	..
Venezuela	1989	..	..	31.3		..	..	..	1991	11.8	3.1	32.2	12.2
Vietnam	1993	57.2	25.9	50.9		..	..	..		..	..	..	..
West Bank and Gaza		..	..	..		..	..	..		..	..	..	..
Yemen, Rep.	1992	19.2	18.6	19.1		..	..	..		..	..	..	..
Yugoslavia, FR (Serb./Mont.)		..	..	..		..	..	..		..	..	..	..
Zambia	1991	88.0	46.0	68.0	1993	..	..	86.0	1993	84.6	53.8	98.1	73.4
Zimbabwe	1990–91	..	..	25.5		..	..	..	1990–91	41.0	14.3	68.2	35.5

Poverty 2.7

About the data

International comparisons of poverty data entail both conceptual and practical problems. Different countries have different definitions of poverty, and consistent comparisons between countries can be difficult. Local poverty lines tend to have higher purchasing power in rich countries, where more generous standards are used than in poor countries.

Is it reasonable to treat two people with the same standard of living—in terms of their command over commodities—differently because one happens to live in a better-off country? Can we hold the real value of the poverty line constant between countries, just as we do when making comparisons over time?

Poverty measures based on an international poverty line attempt to do this. The commonly used $1 a day standard, measured in 1985 international prices and adjusted to local currency using purchasing power parities, was chosen for the World Bank's *World Development Report 1990: Poverty* because it is typical of the poverty lines in low-income countries. Purchasing power parity (PPP) exchange rates, such as those from the Penn World Tables, are used because they take into account the local prices of goods and services that are not traded internationally. But PPP rates were designed not for making international poverty comparisons but for comparing aggregates from national accounts. As a result there is no certainty that an international poverty line measures the same degree of need or deprivation across countries.

Just as there are problems in comparing a poverty measure for one country with that for another, there can also be problems in comparing poverty measures within countries. For example, the cost of living is typically higher in urban than in rural areas. (Food staples, for example, tend to be more expensive in urban areas.) So the urban monetary poverty line should be higher than the rural poverty line. But it is not always clear that the difference between urban and rural poverty lines found in practice properly reflects the difference in the cost of living. For some countries the urban poverty line in common use has a higher real value—meaning that it allows poor people to buy more commodities for consumption—than does the rural poverty line. Sometimes the difference has been so large as to imply that the incidence of poverty is greater in urban than in rural areas, even though the reverse is found when adjustments are made only for differences in the cost of living. As with international comparisons, when the real value of the poverty line varies, it is not clear how meaningful such urban-rural comparisons are.

The problems of making poverty comparisons do not end there. Further issues arise in measuring household living standards. The choice between income and consumption as a welfare indicator is one issue. Incomes are generally more difficult to measure accurately, and consumption accords better with the idea of the standard of living than does income, which can vary over time even if the standard of living does not. But consumption data are not always available, and when they are not there is little choice but to use income. There are still other problems. Household survey questionnaires can differ widely, for example, in the number of distinct categories of consumer goods they identify. Survey quality varies, and even similar surveys may not be strictly comparable.

Comparisons across countries at different levels of development also pose a potential problem, because of differences in the relative importance of consumption of nonmarket goods. The local market value of all consumption in kind (including consumption from own production, particularly important in underdeveloped rural economies) should be included in the measure of total consumption expenditure. Similarly, the imputed profit from production of nonmarket goods should be included in income. This is not always done, though such omissions were a far bigger problem in surveys before the 1980s. Most survey data now include valuations for consumption or income from own production. Nonetheless, valuation methods vary—for example, some surveys use the price at the nearest market, while others use the average farmgate selling price.

The international poverty measures shown here are based on the most recent PPP estimates from the latest version of the Penn World Tables (PWT_5.6). It should be noted, however, that any revisions in the PPP of a country to incorporate better price indexes can produce dramatically different poverty lines in local currency.

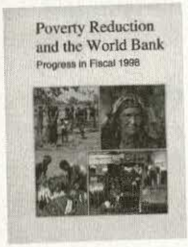
Whenever possible, consumption has been used as the welfare indicator for deciding who is poor. When only household income is available, average income has been adjusted to accord with either a survey-based estimate of mean consumption (when available) or an estimate based on consumption data from national accounts. This procedure adjusts only the mean, however; nothing can be done to correct for the difference in Lorenz (income distribution) curves between consumption and income.

Empirical Lorenz curves were weighted by household size, so they are based on percentiles of population, not households. In all cases the measures of poverty have been calculated from primary data sources (tabulations or household data) rather than existing estimates. Estimation from tabulations requires an interpolation method; the method chosen was Lorenz curves with flexible functional forms, which have proved reliable in past work.

Definitions

• **Survey year** is the year in which the underlying data were collected. • **Rural poverty rate** is the percentage of the rural population living below the national rural poverty line. • **Urban poverty rate** is the percentage of the urban population deemed poor. • **National poverty rate** is the percentage of the population living below the national urban poverty line. National estimates are based on population-weighted subgroup estimates from household surveys. • **Population below $1 a day** and **$2 a day** are the percentages of the population living on less than $1 a day and $2 a day at 1985 international prices, adjusted for purchasing power parity. • **Poverty gap** is the mean shortfall below the poverty line (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.

Data sources



Poverty Reduction
and the World Bank
Progress in Fiscal 1998

Poverty measures are prepared by the World Bank's Development Research Group. National poverty lines are based on the Bank's country poverty assessments. International poverty lines are based on nationally representative primary household surveys conducted by national statistical offices or by private agencies under government or international agency supervision and obtained from government statistical offices and World Bank country departments.

The World Bank has prepared an annual review of poverty work in the Bank since 1993. The most recent is *Poverty Reduction and the World Bank: Progress in Fiscal 1998.*

2.8 Distribution of income or consumption

	Survey year	Gini index	Percentage share of income or consumption						
			Lowest 10%	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	Highest 10%
Albania		..	..	..	..	..	..	..	..
Algeria	1995[a,b]	35.3	2.8	7.0	11.6	16.1	22.7	42.6	26.8
Angola		..	..	..	..	..	..	..	..
Argentina		..	..	..	..	..	..	..	..
Armenia		..	..	..	..	..	..	..	..
Australia	1989[c,d]	33.7	2.5	7.0	12.2	16.6	23.3	40.9	24.8
Austria	1987[c,d]	23.1	4.4	10.4	14.8	18.5	22.9	33.3	19.3
Azerbaijan		..	..	..	..	..	..	..	..
Bangladesh	1992[a,b]	28.3	4.1	9.4	13.5	17.2	22.0	37.9	23.7
Belarus	1995[c,d]	28.8	3.4	8.5	13.5	17.7	23.1	37.2	22.6
Belgium	1992[c,d]	25.0	3.7	9.5	14.6	18.4	23.0	34.5	20.2
Benin		..	..	..	..	..	..	..	..
Bolivia	1990[c,d]	42.0	2.3	5.6	9.7	14.5	22.0	48.2	31.7
Bosnia and Herzegovina		..	..	..	..	..	..	..	..
Botswana		..	..	..	..	..	..	..	..
Brazil	1995[c,d]	60.1	0.8	2.5	5.7	9.9	17.7	64.2	47.9
Bulgaria	1992[c,d]	30.8	3.3	8.3	13.0	17.0	22.3	39.3	24.7
Burkina Faso	1994[a,b]	48.2	2.2	5.5	8.7	12.0	18.7	55.0	39.5
Burundi		..	..	..	..	..	..	..	..
Cambodia		..	..	..	..	..	..	..	..
Cameroon		..	..	..	..	..	..	..	..
Canada	1994[c,d]	31.5	2.8	7.5	12.9	17.2	23.0	39.3	23.8
Central African Republic		..	..	..	..	..	..	..	..
Chad		..	..	..	..	..	..	..	..
Chile	1994[c,d]	56.5	1.4	3.5	6.6	10.9	18.1	61.0	46.1
China	1995[c,d]	41.5	2.2	5.5	9.8	14.9	22.3	47.5	30.9
Hong Kong, China		..	..	..	..	..	..	..	..
Colombia	1995[c,d]	57.2	1.0	3.1	6.8	10.9	17.6	61.5	46.9
Congo, Dem. Rep.		..	..	..	..	..	..	..	..
Congo, Rep.		..	..	..	..	..	..	..	..
Costa Rica	1996[c,d]	47.0	1.3	4.0	8.8	13.7	21.7	51.8	34.7
Côte d'Ivoire	1988[a,b]	36.9	2.8	6.8	11.2	15.8	22.2	44.1	28.5
Croatia		..	..	..	..	..	..	..	..
Cuba		..	..	..	..	..	..	..	..
Czech Republic	1993[c,d]	26.6	4.6	10.5	13.9	16.9	21.3	37.4	23.5
Denmark	1992[c,d]	24.7	3.6	9.6	14.9	18.3	22.7	34.5	20.5
Dominican Republic	1989[c,d]	50.5	1.6	4.2	7.9	12.5	19.7	55.7	39.6
Ecuador	1994[a,b]	46.6	2.3	5.4	8.9	13.2	19.9	52.6	37.6
Egypt, Arab Rep.	1991[a,b]	32.0	3.9	8.7	12.5	16.3	21.4	41.1	26.7
El Salvador	1995[c,d]	49.9	1.2	3.7	8.3	13.1	20.5	54.4	38.3
Eritrea		..	..	..	..	..	..	..	..
Estonia	1995[c,d]	35.4	2.2	6.2	12.0	17.0	23.1	41.8	26.2
Ethiopia	1995[a,b]	40.0	3.0	7.1	10.9	14.5	19.8	47.7	33.7
Finland	1991[c,d]	25.6	4.2	10.0	14.2	17.6	22.3	35.8	21.6
France	1989[c,d]	32.7	2.5	7.2	12.7	17.1	22.8	40.1	24.9
Gabon		..	..	..	..	..	..	..	..
Gambia, The	1992[a,b]	47.8	1.5	4.4	9.0	13.5	20.4	52.8	37.6
Georgia		..	..	..	..	..	..	..	..
Germany	1989[c,d]	28.1	3.7	9.0	13.5	17.5	22.9	37.1	22.6
Ghana	1997[a,b]	32.7	3.6	8.4	12.2	15.8	21.9	41.7	26.1
Greece		..	..	..	..	..	..	..	..
Guatemala	1989[c,d]	59.6	0.6	2.1	5.8	10.5	18.6	63.0	46.6
Guinea	1994[a,b]	40.3	2.6	6.4	10.4	14.8	21.2	47.2	32.0
Guinea-Bissau	1991[a,b]	56.2	0.5	2.1	6.5	12.0	20.6	58.9	42.4
Guyana	1993[a,b]	40.2	2.4	6.3	10.7	15.0	21.2	46.9	32.0
Haiti		..	..	..	..	..	..	..	..
Honduras	1996[c,d]	53.7	1.2	3.4	7.1	11.7	19.7	58.0	42.1

Distribution of income or consumption 2.8

	Survey year	Gini index	Percentage share of income or consumption						
			Lowest 10%	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	Highest 10%
Hungary	1993[c,d]	27.9	4.1	9.7	13.9	16.9	21.4	38.1	24.0
India	1994[a,b]	29.7	4.1	9.2	13.0	16.8	21.7	39.3	25.0
Indonesia	1996[c,d]	36.5	3.6	8.0	11.3	15.1	20.8	44.9	30.3
Iran, Islamic Rep.		..	..	..	..	..	..	..	..
Iraq		..	..	..	..	..	..	..	..
Ireland	1987[c,d]	35.9	2.5	6.7	11.6	16.4	22.4	42.9	27.4
Israel	1992[c,d]	35.5	2.8	6.9	11.4	16.3	22.9	42.5	26.9
Italy	1991[c,d]	31.2	2.9	7.6	12.9	17.3	23.2	38.9	23.7
Jamaica	1991[a,b]	41.1	2.4	5.8	10.2	14.9	21.6	47.5	31.9
Japan		..	..	..	..	..	..	..	..
Jordan	1991[a,b]	43.4	2.4	5.9	9.8	13.9	20.3	50.1	34.7
Kazakhstan	1993[c,d]	32.7	3.1	7.5	12.3	16.9	22.9	40.4	24.9
Kenya	1994[a,b]	44.5	1.8	5.0	9.7	14.2	20.9	50.2	34.9
Korea, Dem. Rep.		..	..	..	..	..	..	..	..
Korea, Rep.		..	..	..	..	..	..	..	..
Kuwait		..	..	..	..	..	..	..	..
Kyrgyz Republic	1993[c,d]	35.3	2.7	6.7	11.5	16.4	23.1	42.3	26.2
Lao PDR	1992[a,b]	30.4	4.2	9.6	12.9	16.3	21.0	40.2	26.4
Latvia	1995[c,d]	28.5	3.3	8.3	13.8	18.0	22.9	37.0	22.4
Lebanon		..	..	..	..	..	..	..	..
Lesotho	1986–87[a,b]	56.0	0.9	2.8	6.5	11.2	19.4	60.1	43.4
Libya		..	..	..	..	..	..	..	..
Lithuania	1993[c,d]	33.6	3.4	8.1	12.3	16.2	21.3	42.1	28.0
Luxembourg	1991[c,d]	26.9	4.2	9.5	13.6	17.7	22.4	36.7	22.3
Macedonia, FYR		..	..	..	..	..	..	..	..
Madagascar	1993[a,b]	46.0	1.9	5.1	9.4	13.3	20.1	52.1	36.7
Malawi		..	..	..	..	..	..	..	..
Malaysia	1989[c,d]	48.4	1.9	4.6	8.3	13.0	20.4	53.7	37.9
Mali	1994[a,b]	50.5	1.8	4.6	8.0	11.9	19.3	56.2	40.4
Mauritania	1995[a,b]	38.9	2.3	6.2	10.8	15.4	22.0	45.6	29.9
Mauritius		..	..	..	..	..	..	..	..
Mexico	1995[c,d]	53.7	1.4	3.6	7.2	11.8	19.2	58.2	42.8
Moldova	1992[c,d]	34.4	2.7	6.9	11.9	16.7	23.1	41.5	25.8
Mongolia	1995[a,b]	33.2	2.9	7.3	12.2	16.6	23.0	40.9	24.5
Morocco	1990–91[a,b]	39.2	2.8	6.6	10.5	15.0	21.7	46.3	30.5
Mozambique		..	..	..	..	..	..	..	..
Myanmar		..	..	..	..	..	..	..	..
Namibia		..	..	..	..	..	..	..	..
Nepal	1995–96[a,b]	36.7	3.2	7.6	11.5	15.1	21.0	44.8	29.8
Netherlands	1991[c,d]	31.5	2.9	8.0	13.0	16.7	22.5	39.9	24.7
New Zealand		..	..	..	..	..	..	..	..
Nicaragua	1993[a,b]	50.3	1.6	4.2	8.0	12.6	20.0	55.2	39.8
Niger	1995[a,b]	50.5	0.8	2.6	7.1	13.9	23.1	53.3	35.4
Nigeria	1992–93[a,b]	45.0	1.3	4.0	8.9	14.4	23.4	49.4	31.4
Norway	1991[c,d]	25.2	4.1	10.0	14.3	17.9	22.4	35.3	21.2
Oman		..	..	..	..	..	..	..	..
Pakistan	1996[a,b]	31.2	4.1	9.4	13.0	16.0	20.3	41.2	27.7
Panama	1995[c,d]	57.1	0.7	2.3	6.2	11.3	19.8	60.4	43.8
Papua New Guinea	1996[a,b]	50.9	1.7	4.5	7.9	11.9	19.2	56.5	40.5
Paraguay	1995[c,d]	59.1	0.7	2.3	5.9	10.7	18.7	62.4	46.6
Peru	1996[c,d]	46.2	1.6	4.4	9.1	14.1	21.3	51.2	35.4
Philippines	1994[a,b]	42.9	2.4	5.9	9.6	13.9	21.1	49.6	33.5
Poland	1992[a,b]	27.2	4.0	9.3	13.8	17.7	22.6	36.6	22.1
Portugal		..	..	..	..	..	..	..	..
Puerto Rico		..	..	..	..	..	..	..	..
Romania	1994[c,d]	28.2	3.7	8.9	13.6	17.6	22.6	37.3	22.7
Russian Federation	1996[a,b]	48.0	1.4	4.2	8.8	13.6	20.7	52.8	37.4

2.8 Distribution of income or consumption

	Survey year	Gini index	Percentage share of income or consumption						
			Lowest 10%	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	Highest 10%
Rwanda	1983–85[a,b]	28.9	4.2	9.7	13.2	16.5	21.6	39.1	24.2
Saudi Arabia		..	..	..	..	..	..	..	..
Senegal	1991[a,b]	53.8	1.0	3.1	7.4	12.1	19.5	57.9	42.3
Sierra Leone	1989[a,b]	62.9	0.5	1.1	2.0	9.8	23.7	63.4	43.6
Singapore		..	..	..	..	..	..	..	..
Slovak Republic	1992[c,d]	19.5	5.1	11.9	15.8	18.8	22.2	31.4	18.2
Slovenia	1993[c,d]	29.2	4.0	9.3	13.3	16.9	21.9	38.6	24.5
South Africa	1993–94[a,b]	59.3	1.1	2.9	5.5	9.2	17.7	64.8	45.9
Spain	1990[c,d]	32.5	2.8	7.5	12.6	17.0	22.6	40.3	25.2
Sri Lanka	1990[a,b]	30.1	3.8	8.9	13.1	16.9	21.7	39.3	25.2
Sudan		..	..	..	..	..	..	..	..
Sweden	1992[c,d]	25.0	3.7	9.6	14.5	18.1	23.2	34.5	20.1
Switzerland	1982[c,d]	36.1	2.9	7.4	11.6	15.6	21.9	43.5	28.6
Syrian Arab Republic		..	..	..	..	..	..	..	..
Tajikistan		..	..	..	..	..	..	..	..
Tanzania	1993[a,b]	38.2	2.8	6.8	11.0	15.1	21.6	45.5	30.1
Thailand	1992[a,b]	46.2	2.5	5.6	8.7	13.0	20.0	52.7	37.1
Togo		..	..	..	..	..	..	..	..
Trinidad and Tobago		..	..	..	..	..	..	..	..
Tunisia	1990[a,b]	40.2	2.3	5.9	10.4	15.3	22.1	46.3	30.7
Turkey		..	..	..	..	..	..	..	..
Turkmenistan	1993[c,d]	35.8	2.7	6.7	11.4	16.3	22.8	42.8	26.9
Uganda	1992–93[a,b]	39.2	2.6	6.6	10.9	15.2	21.3	46.1	31.2
Ukraine	1995[c,d]	47.3	1.4	4.3	9.0	13.8	20.8	52.2	36.8
United Arab Emirates		..	..	..	..	..	..	..	..
United Kingdom	1986[c,d]	32.6	2.4	7.1	12.8	17.2	23.1	39.8	24.7
United States	1994[c,d]	40.1	1.5	4.8	10.5	16.0	23.5	45.2	28.5
Uruguay		..	..	..	..	..	..	..	..
Uzbekistan		..	..	..	..	..	..	..	..
Venezuela	1995[c,d]	46.8	1.5	4.3	8.8	13.8	21.3	51.8	35.6
Vietnam	1993[a,b]	35.7	3.5	7.8	11.4	15.4	21.4	44.0	29.0
West Bank and Gaza		..	..	..	..	..	..	..	..
Yemen, Rep.	1992[a,b]	39.5	2.3	6.1	10.9	15.3	21.6	46.1	30.8
Yugoslavia, FR (Serb./Mont.)		..	..	..	..	..	..	..	..
Zambia	1996[a,b]	49.8	1.6	4.2	8.2	12.8	20.1	54.8	39.2
Zimbabwe	1990[a,b]	56.8	1.8	4.0	6.3	10.0	17.4	62.3	46.9

a. Refers to expenditure shares by percentiles of population. b. Ranked by per capita expenditure. c. Refers to income shares by percentiles of population. d. Ranked by per capita income.

Distribution of income or consumption 2.8

About the data

Inequality in the distribution of income is reflected in the percentage share of either income or consumption accruing to segments of the population ranked by income or consumption levels. The segments ranked lowest by personal income receive the smallest share of total income. The Gini index provides a convenient summary measure of the degree of inequality.

Data on personal or household income or consumption come from nationally representative household surveys. The data in the table refer to different years between 1985 and 1997. Footnotes to the survey year indicate whether the rankings are based on per capita income or consumption. Each distribution (including for high-income economies) is based on percentiles of population—rather than of households—with households ranked by income or expenditure per person. Where the original data from the household survey were available, they have been used to directly calculate the income (or consumption) shares by quintile. Otherwise, shares have been estimated from the best available grouped data.

The distribution indicators have been adjusted for household size, providing a more consistent measure of per capita income or consumption. No adjustment has been made for spatial differences in cost of living within countries, because the data needed for such calculations are generally unavailable. For further details on the estimation method for low- and middle-income economies see Ravallion and Chen (1996).

Because the underlying household surveys differ in method and in the type of data collected, the distribution indicators are not strictly comparable across countries. These problems are diminishing as survey methods improve and become more standardized, but achieving strict comparability is still impossible (see *About the data* for table 2.7).

The following sources of noncomparability should be noted. First, the surveys can differ in many respects, including whether they use income or consumption expenditure as the living standard indicator. The distribution of income is typically more unequal than the distribution of consumption. In addition, the definitions of income used in surveys are usually very different. Consumption is usually a much better welfare indicator, particularly in developing countries. Second, household units differ in size (number of members) and in extent of income sharing among members. And individuals differ in age and consumption needs. Differences between countries in these respects may bias comparisons of distribution.

World Bank staff have made an effort to ensure that the data are as comparable as possible. Whenever possible, consumption has been used rather than income. Households have been ranked by consumption or income per capita in forming the percentiles, and the percentiles are of population, not households. The income distribution and Gini indexes for high-income countries are directly calculated from the Luxembourg Income Study database. The estimation method used here is consistent with that which is applied to developing countries.

Definitions

• **Survey year** is the year in which the underlying data were collected. • **Gini index** measures the extent to which the distribution of income (or, in some cases, consumption expenditures) among individuals or households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus a Gini index of zero represents perfect equality, while an index of 100 implies perfect inequality. • **Percentage share of income or consumption** is the share that accrues to subgroups of population indicated by deciles or quintiles. Percentage shares by quintiles may not add up to 100 because of rounding.

Data sources

Data on distribution are compiled by the World Bank's Development Research Group using primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from national sources, supplemented by the Luxembourg Income Study database.

2.9 Education inputs

	Public expenditure on education		Expenditure per student						Expenditure on teaching materials		Primary pupil-teacher ratio	Duration of primary education
	% of GNP		Primary % of GNP per capita		Secondary % of GNP per capita		Tertiary % of GNP per capita		Primary % of total for level	Secondary % of total for level	pupils per teacher	years
	1980	1996	1980	1996	1980	1996	1980	1996	1996	1996	1996	1995
Albania	..	*3.1*	..	*9.5*	..	..	..	..	..	*5.5*	*18*	8
Algeria	7.8	5.1	..	26.4	23.9	..	..	..	..	..	27	6
Angola	..	..	..	..	..	..	..	..	..	..	..	4
Argentina	2.7	3.5	6.5	8.3	..	..	29.3	*19.8*	..	..	16	7
Armenia	..	2.0	..	..	..	..	..	26.0	..	..	19	4
Australia	5.5	*5.6*	..	*17.4*	44.7	*18.8*	51.3	*30.4*	..	..	18	7
Austria	5.4	*5.6*	15.7	*23.1*	..	*25.1*	37.3	*37.6*	..	..	*12*	4
Azerbaijan	..	3.3	..	*16.9*	..	..	..	14.9	..	..	*21*	4
Bangladesh	1.5	2.9	4.8	..	*14.1*	..	46.7	..	..	..	..	5
Belarus	..	6.1	..	*47.4*	..	*9.2*	..	19.3	..	..	*20*	4
Belgium	6.0	3.2	17.7	*15.1*	*34.3*	*25.2*	51.8	*32.9*	0.2	..	*12*	6
Benin	..	*3.2*	..	*11.8*	..	..	..	*249.1*	..	..	*52*	6
Bolivia	4.4	5.6	13.7	..	15.2	..	..	..	..	..	..	8
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	6.0	10.4	*12.5*	..	..	..	*611.7*	..	..	..	25	7
Brazil	3.6	*5.5*	8.7	..	11.0	..	58.6	..	..	..	*23*	8
Bulgaria	4.5	3.3	17.5	31.9	..	..	51.3	18.0	..	..	17	4
Burkina Faso	2.2	1.5	23.1	*21.2*	*87.3*	..	2,960.8	..	0.8	..	*51*	6
Burundi	*3.4*	3.1	..	*18.6*	*222.1*	..	*1,479.0*	..	..	..	*50*	6
Cambodia	..	2.9	..	..	..	..	..	..	..	..	44	5
Cameroon	3.6	*2.9*	*11.0*	..	..	..	*400.2*	..	..	..	..	6
Canada	6.9	*7.0*	..	..	*48.5*	*51.0*	39.1	*40.5*	..	..	*16*	6
Central African Republic	..	..	22.0	..	..	..	939.5	..	..	..	..	6
Chad	..	*2.4*	..	9.0	..	..	..	..	..	..	67	6
Chile	4.6	3.1	9.5	10.1	*16.7*	10.8	111.2	18.8	0.0	..	30	8
China	2.5	2.3	3.8	6.5	..	*15.0*	245.4	65.9	..	..	24	5
Hong Kong, China	2.4	*2.9*	6.7	*7.8*	8.2	*12.5*	*45.5*	..	0.3	..	*24*	6
Colombia	2.4	4.4	6.6	10.4	..	*11.4*	56.0	37.4	..	..	25	5
Congo, Dem. Rep.	2.6	..	..	..	..	..	748.1	..	..	..	*45*	6
Congo, Rep.	7.0	*6.2*	10.1	*19.1*	..	..	369.8	..	0.1	*1.4*	*70*	6
Costa Rica	7.8	5.3	13.1	13.4	25.8	23.0	76.1	..	0.4	..	30	6
Côte d'Ivoire	7.2	5.0	22.7	16.9	..	..	378.3	*210.1*	..	..	*41*	6
Croatia	..	*5.3*	..	..	..	..	..	..	..	..	19	4
Cuba	7.2	..	10.4	..	..	..	28.5	..	*5.7*	1.0	12	6
Czech Republic	..	5.4	..	*16.3*	..	*23.7*	..	*40.3*	..	*36.1*	*19*	4
Denmark	6.8	*8.2*	38.4	*25.9*	11.6	*36.6*	51.5	*55.3*	4.3	..	*10*	6
Dominican Republic	2.2	2.0	3.1	*3.3*	..	*4.4*	..	9.8	..	..	*35*	8
Ecuador	5.6	3.5	5.6	7.6	..	..	24.2	..	..	..	25	6
Egypt, Arab Rep.	*5.7*	*4.8*	..	..	..	25.9	57.9	..	..	*0.7*	23	5
El Salvador	3.9	*2.2*	12.5	*7.0*	..	*5.5*	141.5	..	..	..	33	9
Eritrea	..	1.8	..	9.2	..	9.9	..	..	..	..	44	5
Estonia	..	7.3	..	..	..	*44.8*	..	38.4	..	4.5	*17*	6
Ethiopia	*3.1*	4.0	*17.7*	*34.0*	..	*61.6*	*1,120.6*	*962.0*	*2.5*	..	*38*	6
Finland	5.3	*7.6*	20.7	*23.3*	..	*28.6*	37.4	*49.4*	6.2	..	..	6
France	5.0	*6.1*	12.0	*15.8*	20.2	*26.9*	29.3	*26.0*	..	..	*19*	5
Gabon	2.7	*2.8*	..	..	..	..	..	..	..	..	*51*	6
Gambia, The	3.3	*6.0*	19.4	*14.5*	..	..	..	*286.5*	..	2.4	*30*	6
Georgia	..	*5.2*	..	..	..	*25.0*	..	*25.5*	..	..	18	4
Germany	..	*4.8*	..	..	..	*30.7*	..	*37.3*	..	..	*17*	4
Ghana	3.1	..	3.7	..	..	..	*26.7*	..	*1.6*	..	..	6
Greece	*2.0*	3.0	*7.0*	*16.0*	*9.6*	*14.7*	*30.1*	*20.7*	*2.4*	..	*15*	6
Guatemala	1.8	*1.7*	*4.8*	*6.1*	*10.4*	..	*44.8*	*31.1*	..	..	35	6
Guinea	..	..	..	*7.8*	..	..	..	*260.2*	..	..	*49*	6
Guinea-Bissau	..	..	32.1	..	107.5	..	..	..	..	..	..	6
Haiti	1.5	..	5.9	..	..	..	130.0	..	1.5	..	..	6
Honduras	3.2	*3.6*	10.7	*9.0*	..	..	77.4	68.8	3.6	*0.3*	*35*	6

Education inputs 2.9

	Public expenditure on education		Expenditure per student						Expenditure on teaching materials		Primary pupil-teacher ratio	Duration of primary education
	% of GNP		Primary % of GNP per capita		Secondary % of GNP per capita		Tertiary % of GNP per capita		Primary % of total for level	Secondary % of total for level	pupils per teacher	years
	1980	1996	1980	1996	1980	1996	1980	1996	1996	1996	1996	1995
Hungary	4.7	4.7	14.1	*20.6*	..	*20.3*	85.4	47.0	..	..	*11*	4
India	3.0	*3.4*	10.5	*11.6*	..	..	88.5	74.8	..	..	*64*	5
Indonesia	1.7	1.4	..	..	..	*6.6*	..	12.9	..	..	*23*	6
Iran, Islamic Rep.	7.5	*4.0*	*16.2*	7.6	..	10.1	*67.5*	43.2	..	1.2	31	5
Iraq	3.0	..	7.1	..	6.5	..	87.8	..	..	..	*20*	6
Ireland	6.3	5.8	11.6	*14.4*	24.3	*22.3*	60.0	36.5	0.3	..	*23*	6
Israel	7.9	*7.2*	15.4	*19.6*	..	*32.7*	72.5	35.2	9.9	..	*16*	6
Italy	..	*4.7*	..	*21.5*	..	..	..	21.9	..	..	*11*	5
Jamaica	7.0	7.4	13.8	..	22.0	..	202.6	..	1.7	*1.1*	..	6
Japan	5.8	*3.6*	14.8	*19.3*	16.6	*19.0*	21.0	*13.9*	4.9	..	*19*	6
Jordan	6.6	7.3	..	..	..	*90.5*	60.1	74.7	..	4.6	*21*	10
Kazakhstan	..	4.7	..	..	..	..	..	*22.0*	..	..	*18*	4
Kenya	6.8	6.6	15.7	*17.0*	..	..	928.7	..	..	..	*30*	8
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	4
Korea, Rep.	3.7	*3.7*	10.4	*18.8*	9.2	*12.9*	15.9	*6.0*	*2.2*	*0.1*	31	6
Kuwait	2.4	*5.7*	14.8	*21.8*	*12.4*	*14.6*	37.5	*89.5*	6.3	..	15	4
Kyrgyz Republic	..	5.7	..	..	..	*36.4*	..	*50.5*	..	*0.6*	*20*	4
Lao PDR	..	2.5	..	..	..	..	..	60.6	..	9.4	*30*	5
Latvia	3.3	6.5	..	..	..	38.2	19.1	33.8	..	0.7	13	4
Lebanon	..	2.5	..	18.5	..	..	..	*22.3*	..	..	..	5
Lesotho	5.1	*7.0*	8.6	*16.2*	72.2	*62.0*	999.7	*397.6*	*0.4*	..	47	7
Libya	3.4	..	..	..	..	..	58.2	..	..	..	..	9
Lithuania	..	5.6	..	..	..	*28.4*	..	43.0	..	0.5	16	4
Macedonia, FYR	..	5.6	..	22.1	..	29.8	..	75.6	..	*0.1*	19	8
Madagascar	4.4	*1.9*	9.2	*5.1*	36.2	..	402.7	..	1.1	..	*37*	5
Malawi	3.4	*5.5*	7.6	*9.0*	..	*79.9*	1,839.9	*1,636.0*	..	..	*59*	8
Malaysia	6.0	5.2	12.0	*11.4*	..	..	148.9	*78.8*	6.0	*14.7*	*20*	6
Mali	3.7	*2.2*	31.7	*15.4*	..	..	*924.4*	..	*2.2*	..	*70*	6
Mauritania	..	*5.1*	30.5	11.2	..	*70.3*	..	*205.6*	..	1.4	50	6
Mauritius	5.3	*4.3*	15.8	9.8	..	..	343.6	67.5	0.0	..	24	6
Mexico	4.7	*4.9*	4.4	*11.9*	..	*17.9*	26.4	*46.9*	..	..	*28*	6
Moldova	..	9.7	..	..	..	..	..	57.9	..	..	23	4
Mongolia	..	6.4	..	..	..	46.2	..	52.1	..	..	31	3
Morocco	6.1	5.3	15.6	14.3	54.8	..	155.4	*72.3*	*0.2*	1.0	28	6
Mozambique	4.4	..	..	..	..	..	..	..	..	..	*58*	5
Myanmar	1.7	*1.2*	..	..	..	..	..	*19.0*	..	..	..	5
Namibia	*1.3*	9.1	..	*15.5*	..	*33.8*	..	*100.7*	..	..	..	7
Nepal	1.8	2.8	14.6	..	..	..	271.9	*140.6*	7.2	..	..	5
Netherlands	7.6	*5.2*	13.9	..	23.3	*21.0*	73.4	*47.6*	3.1	..	..	6
New Zealand	5.8	7.3	15.1	17.9	13.6	23.8	59.8	45.8	7.9	..	19	6
Nicaragua	3.4	3.7	8.2	*11.4*	15.5	..	25.8	..	*0.9*	..	*38*	6
Niger	3.1	..	*26.2*	..	..	..	*1,539.5*	..	..	..	41	6
Nigeria	*6.4*	*0.9*	*4.7*	..	..	..	*529.8*	..	..	..	*37*	6
Norway	6.5	7.5	27.2	*31.1*	14.9	*20.1*	38.1	*48.0*	2.0	..	..	6
Oman	2.1	*4.4*	..	*13.1*	..	*22.1*	..	*27.4*	..	0.9	*26*	6
Pakistan	2.0	3.0	8.7	..	..	127.4	*521.2*	..	..	..	..	5
Panama	4.9	*4.6*	12.3	..	11.5	..	29.8	*41.1*	1.8	..	..	6
Papua New Guinea	..	..	..	..	..	..	..	..	..	..	*38*	6
Paraguay	1.5	3.9	..	10.9	..	12.0	..	91.0	..	..	21	6
Peru	3.1	2.9	7.2	..	*11.4*	..	..	..	0.7	2.4	*28*	6
Philippines	1.7	*2.2*	5.8	..	4.3	..	13.8	..	..	..	35	6
Poland	..	*5.2*	8.1	*17.1*	14.8	*16.7*	47.4	*40.7*	..	*1.0*	*15*	8
Portugal	3.8	*5.5*	13.5	*20.9*	..	*20.9*	36.2	*25.2*	*0.2*	..	*12*	6
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	8
Romania	3.3	3.6	..	20.0	..	8.7	..	31.6	..	..	20	4
Russian Federation	3.5	*4.1*	..	..	..	..	..	..	..	..	*20*	3

2.9 Education inputs

	Public expenditure on education		Expenditure per student						Expenditure on teaching materials		Primary pupil-teacher ratio	Duration of primary education
			Primary		Secondary		Tertiary		Primary	Secondary		
	% of GNP		% of GNP per capita		% of GNP per capita		% of GNP per capita		% of total for level	% of total for level	pupils per teacher	years
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1996**	**1996**	**1996**	**1995**
Rwanda	2.7	..	11.1	..	..	..	902.6	..	3.5	..	..	7
Saudi Arabia	4.1	*5.5*	18.9	*36.6*	..	..	109.3	*70.6*	..	..	13	6
Senegal	..	3.5	24.6	10.6	..	..	442.7	..	4.0	..	58	6
Sierra Leone	3.5	..	..	..	..	..	..	..	..	..	..	7
Singapore	2.8	*3.0*	6.8	*7.8*	..	..	40.6	*28.2*	0.0	..	*22*	6
Slovak Republic	..	4.9	..	23.4	..	*4.1*	..	30.5	..	0.5	19	4
Slovenia	..	*5.8*	..	*20.5*	..	*24.2*	..	*37.6*	..	*6.1*	14	8
South Africa	..	7.9	..	15.5	..	23.7	..	*64.7*	..	4.7	36	7
Spain	2.3	*4.9*	..	*15.3*	..	..	..	*16.8*	..	..	*17*	6
Sri Lanka	2.7	3.4	..	..	..	*14.9*	*65.6*	*84.8*	..	..	28	5
Sudan	4.8	..	26.9	..	..	..	589.6	..	..	0.0	29	8
Sweden	9.0	8.3	43.0	*27.6*	*15.8*	*34.8*	35.0	*75.7*	3.9	..	*11*	6
Switzerland	4.8	*5.3*	..	*18.8*	30.5	*28.4*	59.6	*44.5*	..	..	*12*	6
Syrian Arab Republic	4.6	4.2	8.0	8.2	15.1	16.4	74.7	..	*1.9*	8.2	23	6
Tajikistan	..	2.2	..	..	..	..	..	*39.5*	..	0.5	24	4
Tanzania	..	..	..	..	..	..	..	..	..	..	36	7
Thailand	3.4	*4.1*	8.8	*16.0*	..	..	60.2	*30.7*	1.0	*4.3*	..	6
Togo	5.6	4.7	8.3	*7.8*	..	..	889.9	*501.4*	0.2	8.5	*51*	6
Trinidad and Tobago	4.0	3.7	9.2	..	*20.1*	..	59.5	..	*1.0*	2.8	*25*	7
Tunisia	5.4	6.7	11.8	15.3	37.8	..	194.7	79.3	2.0	..	24	6
Turkey	2.2	*2.2*	6.4	*13.4*	..	*9.4*	95.1	*51.8*	0.1	..	*28*	5
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	4
Uganda	1.2	*2.6*	*4.3*	..	..	..	*1,036.9*	..	..	*1.3*	*35*	7
Ukraine	5.6	*7.2*	21.2	*43.4*	..	*7.3*	20.1	*22.6*	..	..	*20*	4
United Arab Emirates	1.3	*1.8*	..	..	..	..	..	..	..	..	16	6
United Kingdom	5.6	*5.4*	16.0	*18.8*	22.2	*20.6*	79.9	*40.9*	2.9	..	*18*	6
United States	6.7	*5.4*	27.0	*18.5*	..	*23.8*	48.2	*24.7*	..	..	*16*	6
Uruguay	2.3	3.3	11.1	9.3	..	..	28.1	24.3	5.8	..	20	6
Uzbekistan	..	8.1	..	..	..	..	..	..	..	*0.3*	*21*	4
Venezuela	4.4	*5.2*	5.7	*2.2*	*23.1*	*4.8*	71.2	..	0.7	*1.7*	..	9
Vietnam	..	*2.6*	..	..	..	..	..	..	..	..	..	5
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	10
Yemen, Rep.	..	6.5	..	..	..	..	..	..	..	..	30	9
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	4
Zambia	4.5	*2.2*	10.6	*5.1*	..	*15.4*	*605.0*	*369.0*	2.8	..	*39*	7
Zimbabwe	6.6	8.3	24.3	*20.2*	..	*38.2*	407.1	*406.5*	*9.8*	..	39	7
World	**4.0 m**	***4.8 m***	**11.6 m**	**.. m**	**..**	**.. m**	**60.1 m**	**.. m**	**.. m**	**..**	***33 w***	**6 m**
Low income	3.4	..	..	..	..	..	..	..	..	..	*56*	6
Middle income	4.0	4.9	9.2	..	..	..	59.8	..	..	..	*24*	6
Lower middle income	3.9	5.1	..	..	..	..	..	..	..	..	25	6
Upper middle income	4.0	4.8	8.9	*14.7*	..	..	59.5	*50.2*	..	..	*24*	6
Low & middle income	3.5	*4.3*	..	..	..	..	..	..	..	..	*36*	6
East Asia & Pacific	2.1	2.7	..	..	..	..	..	*49.8*	..	..	25	5
Europe & Central Asia	..	5.4	..	..	..	..	..	*40.4*	..	..	*20*	4
Latin America & Carib.	3.8	3.7	8.9	..	..	..	58.6	..	..	..	*25*	6
Middle East & N. Africa	5.0	*5.2*	..	..	..	..	81.2	..	..	..	26	6
South Asia	2.0	3.0	10.5	..	..	..	88.5	..	..	..	*63*	5
Sub-Saharan Africa	4.1	*4.3*	*13.2*	..	..	..	*787.9*	..	..	..	*41*	6
High income	5.6	*5.3*	15.1	*20.5*	..	*23.2*	40.6	*37.6*	*2.6*	..	*18*	6
Europe EMU	5.3	*5.3*	13.9	*21.5*	..	*26.0*	37.4	*36.9*	*0.3*	..	*16*	6

Education inputs 2.9

About the data

Data on education are compiled by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) from official responses to surveys and from reports provided by education authorities in each country and are used for monitoring, policymaking, and resource allocation. For a variety of reasons education statistics generally fail to provide a complete and accurate picture of a country's education system. Statistics are often out of date by two to three years. The information collected focuses more on inputs than on outcomes. And coverage, definitions, and data collection methods vary across countries and over time within countries. Data on education should therefore be interpreted with caution. (For further discussion of the reliability of education data see Behrman and Rosenzweig 1994.)

The data on education spending refer solely to public spending—that is, government spending on public education plus subsidies for private education. The data generally exclude foreign aid for education. They also may exclude spending by religious schools, which play a significant role in many developing countries. Data for some countries and for some years refer to spending by the ministry of education of the central government only (excluding education expenditures by other ministries and departments, local authorities, and so on).

Many developing countries have sought to supplement public funds for education. Some countries have adopted policies to charge tuition fees in order to recover part of the cost of providing education services or to encourage development of private schools. Charging fees raises difficult questions relating to equity, efficiency, access, and taxation, however, and some governments have used scholarships, vouchers, and other methods of public finance to counter this criticism. Data for a few countries include private spending, although national practices vary with respect to whether parents or schools pay for books, uniforms, and other supplies. Readers seeking greater detail should consult the country- and indicator-specific notes in the source cited below.

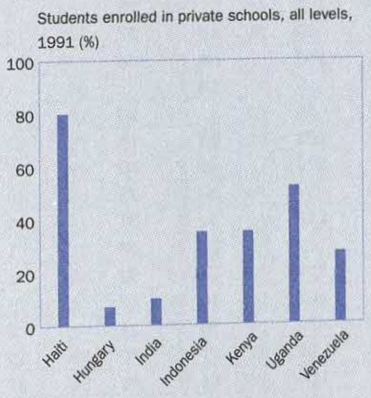
The percentage of GNP devoted to education can be interpreted as reflecting a country's effort in education. Often it bears a weak relationship to measures of output of the education system, as reflected in educational attainment. The pattern suggests wide variations across countries in the efficiency with which the government's resources are translated into education outcomes.

The comparability of pupil-teacher ratios is affected by whether both full- and part-time teachers are included, whether teachers are assigned nonteaching duties, and by differences in class size by grade and in the number of hours taught. Moreover, the underlying enrollment levels are subject to a variety of reporting errors. (See *About the data* for table 2.10 for further discussion of enrollment data.) While the pupil-teacher ratio is often used to compare the quality of schooling across countries, it is often only weakly related to the value added of schooling systems (Behrman and Rosenzweig 1994).

In many countries the duration of primary education changed between 1980 and 1995 (see *Definitions* for table 2.10 for definitions of primary, secondary, and tertiary education). As a result the relative size of public spending on education by level and primary pupil-teacher ratios also may have changed. These changes affect the comparability of gross enrollment ratios over time and across countries.

Figure 2.9

Private spending on education is sizable in some low- and middle-income countries



a. Data refer to 1992–93.
b. Data refer to 1989–90.
c. Data refer to 1987.
Source: World Bank 1995d.

Enrollments in private schools are substantial in some countries. In Latin America, for example, almost a third of secondary enrollments are private. The world trade in education was estimated at $28 billion in 1996 and is projected to increase dramatically. New methods of public finance of private education (scholarships and vouchers) are increasing competition between public and private institutions, indirectly improving education quality, and public-to-private transfers are expanding access for low-income students.

Definitions

- **Public expenditure on education** is the percentage of GNP accounted for by public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels. • **Expenditure on teaching materials** is the public spending on teaching materials (textbooks, books, and other scholastic supplies) as a percentage of total public spending on primary or secondary education. • **Primary pupil-teacher ratio** is the number of pupils enrolled in primary school divided by the number of primary school teachers (regardless of their teaching assignment). • **Duration of primary education** is the minimum number of grades (years) a child is expected to cover in primary schooling.

Data sources

International data on education are compiled by UNESCO's Division of Statistics in cooperation with national commissions and national statistical services. The data in the table were compiled using a UNESCO electronic database corresponding to various tables in UNESCO's *Statistical Yearbook 1998*.

2.10 Participation in education

	Gross enrollment ratio							Net enrollment ratio[a]			
	Preprimary % of relevant age group	Primary % of relevant age group		Secondary % of relevant age group		Tertiary % of relevant age group		Primary % of relevant age group		Secondary % of relevant age group	
	1996	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Albania	39	113	*107*	67	*38*	5	11	..	*102*	..	..
Algeria	2	95	108	33	63	6	13	81	94	31	56
Angola	62	..	..	21	..	0	1	..	..	..	..
Argentina	54	106	113	56	77	22	42	..	..	..	..
Armenia	25	..	87	..	90	30	12	..	..	..	..
Australia	78	112	101	71	148[b]	25	76	102	95	70	92
Austria	80	99	*101*	93	*104*	22	48	87	*100*	..	*88*
Azerbaijan	19	115	106	95	77	24	18	..	..	..	..
Bangladesh	75	61	..	18	..	3	6	..	..	..	..
Belarus	81	104	98	98	93	39	44	..	*85*	..	..
Belgium	121	104	*103*	91	*146*[b]	26	57	97	*98*	..	*99*
Benin	3	67	78	16	17	1	3	..	63	..	..
Bolivia	42	87	..	37	..	16	24	79	..	16	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..
Botswana	..	91	108	19	65	1	6	76	81	14	*45*
Brazil	58	98	120	34	*45*	11	12	80	*90*	14	*20*
Bulgaria	62	98	99	85	77	16	41	96	92	73	74
Burkina Faso	2	18	*40*	3	*8*	0	1	15	*31*	..	..
Burundi	1	26	*51*	3	*7*	1	1	20	..	..	..
Cambodia	5	..	110	..	29	2	1	..	98	..	..
Cameroon	11	98	*89*	18	*27*	2	4	..	..	15	..
Canada	64	99	*102*	88	*105*	57	90	..	*95*	..	*93*
Central African Republic	6	71	..	14	..	1	1	56	..	..	..
Chad	1	..	58	..	10	0	1	..	46	..	*6*
Chile	93	109	101	53	75	12	30	..	88	..	58
China	29	113	120	46	70	2	6	..	102	..	..
Hong Kong, China	85	107	*94*	64	*73*	10	28	95	*90*	61	*71*
Colombia	35	112	113	39	67	9	19	..	85	..	*50*
Congo, Dem. Rep.	1	92	*72*	24	*26*	1	2	..	*54*	..	*17*
Congo, Rep.	2	141	*114*	74	*53*	5	8	96	..	..	..
Costa Rica	72	105	103	48	47	21	33	89	91	39	43
Côte d'Ivoire	3	75	71	19	24	3	5	..	55	..	..
Croatia	39	..	87	77	82	19	28	..	*82*	..	*66*
Cuba	88	106	106	81	81	17	12	95	101	..	*59*
Czech Republic	91	96	*104*	114	*99*	18	23	..	*91*	..	*87*
Denmark	81	96	*102*	105	*121*	28	46	96	*99*	88	*87*
Dominican Republic	27	118	*103*	42	*41*	10	23	..	*81*	..	*22*
Ecuador	56	118	127	53	*50*	35	26	..	97	..	..
Egypt, Arab Rep.	9	73	101	51	75	16	23	..	93	..	68
El Salvador	34	75	93	24	34	13	17	..	*78*	..	*21*
Eritrea	4	..	53	..	20	..	1	..	30	..	16
Estonia	68	103	94	127	104	25	42	..	*87*	..	*83*
Ethiopia	1	37	*38*	9	*12*	0	1	..	*28*	..	..
Finland	43	96	*99*	100	*116*	32	71	..	*99*	..	*93*
France	86	111	*106*	85	*111*	25	52	100	*100*	79	*94*
Gabon	..	..	..	..	..	..	..	..	..	..	..
Gambia, The	28	53	*77*	11	*25*	..	2	50	*65*	..	..
Georgia	28	93	88	109	77	30	40	..	87	..	*71*
Germany	91	..	*102*	..	*104*	27	45	..	*100*	..	*87*
Ghana	36	79	..	41	..	2	1	..	..	..	..
Greece	62	103	*94*	81	*95*	17	43	96	*90*	..	*87*
Guatemala	33	71	88	19	26	8	8	59	..	13	..
Guinea	3	36	*48*	17	*12*	5	1	..	*37*	..	..
Guinea-Bissau	1	68	*62*	6	..	..	..	47	..	3	..
Haiti	37	..	..	14	..	1	1	..	..	..	..
Honduras	15	98	*111*	30	*32*	8	11	78	*90*	..	..

Participation in education 2.10

	Gross enrollment ratio							Net enrollment ratio[a]			
	Preprimary % of relevant age group	Primary % of relevant age group		Secondary % of relevant age group		Tertiary % of relevant age group		Primary % of relevant age group		Secondary % of relevant age group	
	1996	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Hungary	112	96	*103*	70	*98*	14	25	95	*97*	..	*87*
India	5	83	100	30	49	5	7	..	..	..	..
Indonesia	20	107	*115*	29	*48*	4	11	88	*97*	..	*42*
Iran, Islamic Rep.	9	..	98	42	77	..	17	..	90	..	69
Iraq	7	113	*85*	57	*42*	9	11	99	*76*	47	..
Ireland	118	100	*104*	90	*116*	18	40	100	*100*	78	*86*
Israel	70	95	*98*	73	*88*	29	44	..	..	..	..
Italy	96	100	*101*	72	*94*	27	43	..	*100*	..	..
Jamaica	83	103	100	67	..	7	8	96	..	64	..
Japan	49	101	102	93	*103*	31	43	101	*103*	93	*98*
Jordan	..	..	..	..	..	27	..	..	..	..	..
Kazakhstan	30	85	98	93	87	34	32	..	..	..	..
Kenya	36	115	*85*	20	*24*	1	2	91	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	89	110	94	78	102	15	60	104	92	70	97
Kuwait	55	102	75	80	65	11	27	85	*54*	..	*54*
Kyrgyz Republic	8	116	*104*	110	*79*	16	12	..	*95*	..	..
Lao PDR	8	114	112	21	29	0	3	..	72	..	*18*
Latvia	47	102	96	99	84	24	33	..	90	..	79
Lebanon	74	111	111	59	81	30	27	..	76	..	..
Lesotho	..	104	108	18	31	1	2	67	70	13	17
Libya	5	125	*111*	76	..	8	20	..	..	62	..
Lithuania	40	79	98	114	86	35	31	..	..	..	*80*
Macedonia, FYR	24	100	99	61	63	28	18	..	95	..	51
Madagascar	4	130	*92*	..	*16*	3	2	..	*61*	..	..
Malawi	..	60	*89*	5	*17*	1	1	43	*68*	..	..
Malaysia	59	93	102	48	61	4	11	..	*102*	..	..
Mali	3	26	45	8	*10*	1	1	20	*28*	..	..
Mauritania	1	37	79	11	*16*	1	4	..	*57*	..	..
Mauritius	83	93	107	50	65	1	7	79	98	..	..
Mexico	73	120	*115*	49	*61*	14	16	..	*101*	..	*51*
Moldova	44	83	97	78	81	30	26	..	..	..	..
Mongolia	25	107	88	92	56	22	17	..	81	..	53
Morocco	63	83	86	26	39	6	11	62	74	20	..
Mozambique	..	..	*60*	5	*7*	0	1	..	*40*	..	*6*
Myanmar	..	91	*121*	22	*30*	5	6	..	..	..	..
Namibia	9	..	131	..	61	..	9	..	91	..	36
Nepal	1	86	*109*	22	*38*	3	5	..	..	..	..
Netherlands	102	100	*107*	93	*137*[b]	29	50	93	*99*	81	*91*
New Zealand	77	111	99	83	114	27	59	..	100	81	97
Nicaragua	21	94	*103*	41	*44*	13	13	70	*78*	23	*27*
Niger	1	25	29	5	*7*	0	1	21	25	4	6
Nigeria	..	109	*98*	18	*33*	..	*4*	..	..	..	..
Norway	104	100	*99*	94	*116*	26	62	98	*99*	84	*96*
Oman	4	51	78	12	66	..	6	43	69	10	..
Pakistan	16	39	*74*	14	..	2	3	..	..	..	..
Panama	71	107	*104*	61	*68*	21	32	89	..	46	..
Papua New Guinea	1	59	*80*	12	*14*	2	3	..	..	..	..
Paraguay	53	106	112	27	44	9	11	89	91	..	38
Peru	38	114	*123*	59	*70*	17	31	86	*91*	..	*53*
Philippines	11	112	116	64	77	24	35	94	*101*	45	*60*
Poland	48	100	*96*	77	*98*	18	24	98	*95*	71	*85*
Portugal	59	123	*128*	37	*106*[b]	11	38	99	*104*	..	*78*
Puerto Rico	..	..	..	..	..	48	48	..	..	..	..
Romania	53	104	104	94	78	12	23	..	95	..	73
Russian Federation	74	102	*107*	96	*87*	46	41	..	*93*	..	..

2.10 Participation in education

	Gross enrollment ratio							Net enrollment ratio[a]			
	Preprimary % of relevant age group	Primary % of relevant age group		Secondary % of relevant age group		Tertiary % of relevant age group		Primary % of relevant age group		Secondary % of relevant age group	
	1996	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Rwanda	2	63	..	3	..	0	1	59	..	..	..
Saudi Arabia	8	61	76	30	61	7	16	49	61	21	42
Senegal	2	46	68	11	16	3	3	37	58	..	..
Sierra Leone	2	52	..	14	..	1	2	..	..	..	..
Singapore	19	108	*101*	60	*67*	8	39	99	..	..	..
Slovak Republic	76	..	102	..	94	18	22	..	..	..	..
Slovenia	68	98	98	38	92	20	36	..	95	..	..
South Africa	31	90	131	..	94	5	19	..	..	..	51
Spain	71	109	*109*	87	*122*	23	51	102	*105*	74	..
Sri Lanka	60	103	109	55	*75*	3	5	..	..	..	..
Sudan	24	50	51	16	21	2	4	..	..	..	..
Sweden	73	97	*106*	88	*137*[b]	31	49	..	*102*	..	*98*
Switzerland	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	7	100	101	46	43	17	15	90	91	39	38
Tajikistan	10	..	95	..	78	24	20	..	..	..	..
Tanzania	0	93	66	3	5	0	1	68	48	..	..
Thailand	63	99	87	29	56	15	21	..	..	..	..
Togo	3	118	120	33	27	2	4	..	*85*	..	..
Trinidad and Tobago	12	99	*98*	70	*74*	4	8	90	*90*	..	..
Tunisia	11	102	117	27	65	5	14	82	98	23	..
Turkey	7	96	*105*	35	*56*	5	18	..	*96*	..	*50*
Turkmenistan	37	..	..	..	..	23	20	..	..	..	..
Uganda	..	50	*74*	5	*12*	1	2	..	..	..	..
Ukraine	61	102	*87*	94	*91*	42	42	..	..	..	..
United Arab Emirates	57	89	*94*	52	*80*	3	12	74	*83*	..	*71*
United Kingdom	30	103	*115*	84	*133*[b]	19	50	100	*100*	79	*92*
United States	70	99	*102*	91	*97*	56	81	..	*95*	..	*90*
Uruguay	36	107	109	62	85	17	29	..	93	..	..
Uzbekistan	50	81	*78*	106	*94*	29	36	..	..	..	..
Venezuela	44	93	91	21	40	21	25	82	84	14	22
Vietnam	36	109	*114*	42	*47*	2	5	95	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	1	..	70	..	34	4	4	..	52	..	..
Yugoslavia, FR (Serb./Mont.)	32	..	69	..	62	18	23	..	..	..	..
Zambia	1	90	*89*	16	*27*	2	3	77	*75*	..	*17*
Zimbabwe	..	85	113	8	49	1	7	..	..	..	..
World	**35 w**	**97 w**	***104* w**	**49 w**	***67* w**	**13 w**	**19 w**	**..**	**.. w**	**..**	**.. w**
Low income	14	78	93	25	*42*	4	5	..	..	..	..
Middle income	36	106	114	51	70	11	15	..	*94*	..	..
Lower middle income	33	108	114	52	69	10	14	..	99	..	..
Upper middle income	51	101	*111*	47	*61*	13	19	..	*94*	..	*44*
Low & middle income	28	96	108	41	*58*	8	11	..	..	..	..
East Asia & Pacific	29	111	118	43	69	3	8	..	101	..	..
Europe & Central Asia	53	99	*100*	87	*83*	30	32	..	*92*	..	..
Latin America & Carib.	56	105	113	42	*52*	14	19	..	*91*	..	*33*
Middle East & N. Africa	14	87	96	42	64	11	16	..	87	..	61
South Asia	14	76	100	27	48	5	6	..	..	..	..
Sub-Saharan Africa	12	78	*77*	15	*27*	1	3	..	..	..	..
High income	71	103	*103*	86	*106*	34	58	..	*97*	..	*91*
Europe EMU	88	106	*104*	81	*108*	25	48	..	*101*	..	*90*

a. Net enrollment ratios exceeding 100 indicate discrepancies between the estimates of school-age population and reported enrollment data. b. Includes training for the unemployed.

Participation in education 2.10

About the data

School enrollment data are reported to the United Nations Educational, Scientific, and Cultural Organization (UNESCO) by national education authorities. Enrollment ratios are a useful measure of participation in education, but they may also have significant limitations. Enrollment ratios are based on data collected during annual school surveys, which are typically conducted at the beginning of the school year and therefore do not reflect actual rates of attendance or dropouts during the school year. And school administrators may report exaggerated enrollments, especially if there is a financial incentive to do so. Often, the number of teachers paid by the government is related to the number of pupils enrolled. Behrman and Rosenzweig (1994), comparing official school enrollment data for Malaysia in 1988 with gross school attendance rates from a household survey, found that the official statistics systematically overstated enrollment.

Overage or underage enrollments frequently occur, particularly when parents prefer, for cultural or economic reasons, to have children start school at other than the official age. Children's age at enrollment may also be inaccurately estimated or misstated, especially in communities where registration of births is not strictly enforced. Parents who want to enroll their underage children in primary school may do so by overstating the age of the children. And in some education systems ages for children repeating a grade may be deliberately or inadvertently underreported.

As an international indicator, the gross primary enrollment ratio has been used to indicate broad levels of participation as well as school capacity. It has an inherent weakness: the length of primary education differs significantly across countries (see table 2.9). A short duration tends to increase the ratio and a long duration to decrease it (partly because of more dropouts among older children). Other problems affecting cross-country comparisons of enrollment data stem from errors in estimates of school-age populations. Age-gender structures from censuses or vital registration systems, the primary sources of data on school-age populations, are commonly subject to underenumeration (especially of young children) aimed at circumventing laws or regulations; errors are also introduced when parents round up children's ages. While census data are often adjusted for age bias, adjustments are rarely made for inadequate vital registration systems. Compounding these problems, pre- and postcensus estimates of school-age children are interpolations or projections based on models that may miss important demographic events (see the discussion of demographic data in *About the data* for table 2.1).

In using enrollment data, it is also important to consider repetition rates, which are quite high in some developing countries, leading to a substantial number of overage children enrolled in each grade and raising the gross enrollment ratio. A common error that may also distort enrollment ratios is the lack of distinction between new entrants and repeaters, which, other things equal, leads to underreporting of repeaters and overestimation of dropouts. Thus gross enrollment ratios provide an indication of the capacity of each level of the education system, but a high ratio does not necessarily indicate a successful education system. The net enrollment ratio excludes overage students in an attempt to capture more accurately the system's coverage and internal efficiency. It does not solve the problem completely, however, because some children fall outside the official school age simply because of late or early entry rather than because of grade repetition.

Definitions

• **Gross enrollment ratio** is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Based on the International Standard Classification of Education (ISCED), • **Preprimary** education refers to the initial stage of organized instruction designed primarily to introduce very young children to a school-type environment. • **Primary** education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music. • **Secondary** education completes the provision of basic education that began at the primary level, and aims at laying the foundations for lifelong learning and human development, by offering more subject- or skill-oriented instruction using more specialized teachers. • **Tertiary** education, whether or not leading to an advanced research qualification, normally requires, as a minimum condition of admission, the successful completion of education at the secondary level. • **Net enrollment ratio** is the ratio of the number of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age.

Data sources

The gross enrollment ratios are from UNESCO's *Statistical Yearbook 1998,* and the net enrollment ratios are the results of UNESCO's 1998–99 enrollment estimates and projections.

2.11 Education outcomes

	Percentage of cohort reaching grade 5				Youth illiteracy rate				Expected years of schooling			
	Male		Female		Male % aged 15–24		Female % aged 15–24		Males		Females	
	1980	**1996**	**1980**	**1996**	**1980**	**1997**	**1980**	**1997**	**1980**	**1995**	**1980**	**1995**
Albania	..	81	..	83	..	..	..	..	..	..	..	..
Algeria	90	94	85	95	26	14	55	32	9	11	6	10
Angola	..	..	..	..	..	..	..	..	8	..	7	..
Argentina	..	..	..	..	3	2	3	1	..	..	..	..
Armenia	..	..	..	..	..	..	..	..	..	..	..	..
Australia	..	..	..	..	..	..	..	..	12	16	12	16
Austria	..	..	..	..	..	..	..	..	11	14	11	14
Azerbaijan	..	..	..	..	..	..	..	..	..	..	..	..
Bangladesh	18	..	26	..	52	42	74	63	..	..	..	..
Belarus	..	..	..	..	0	0	0	0	..	..	..	..
Belgium	..	..	..	..	..	..	..	..	14	16	13	15
Benin	59	64	62	57	57	33	84	67	..	..	..	..
Bolivia	..	..	..	..	7	3	21	8	9	..	8	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	*85*	87	*88*	93	32	17	25	9	7	11	8	11
Brazil	..	..	..	..	15	10	13	7	9	..	9	..
Bulgaria	..	..	..	..	1	0	1	1	11	12	11	13
Burkina Faso	77	74	74	77	73	58	92	81	2	3	1	2
Burundi	100	..	96	..	49	36	72	43	3	5	2	4
Cambodia	..	..	..	..	49	36	72	43	..	..	..	..
Cameroon	70	..	70	..	18	7	34	10	8	..	6	..
Canada	..	..	..	..	..	..	..	..	15	17	15	18
Central African Republic	63	..	50	..	44	27	76	48	..	..	..	..
Chad	..	62	..	53	..	..	..	..	..	..	..	..
Chile	*94*	100	*97*	100	3	2	3	1	..	12	..	12
China	..	93	..	94	4	1	16	4	..	..	..	..
Hong Kong, China	98	..	99	..	3	1	4	0	12	13	12	13
Colombia	*36*	70	*39*	76	8	4	7	3	..	..	..	..
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	7	..	4
Congo, Rep.	81	40	83	78	12	3	27	5	..	..	..	..
Costa Rica	77	86	82	89	4	2	3	2	10	..	10	..
Côte d'Ivoire	*86*	77	*79*	71	52	33	76	46	..	..	..	..
Croatia	..	..	..	..	0	0	1	0	..	12	..	12
Cuba	..	..	..	..	2	0	2	0	..	11	..	12
Czech Republic	..	..	..	..	..	..	..	..	..	13	..	13
Denmark	99	100	99	99	..	..	..	..	14	15	14	15
Dominican Republic	..	..	..	..	18	10	17	9	..	11	..	11
Ecuador	..	84	..	86	6	3	9	3	..	..	..	..
Egypt, Arab Rep.	92	..	88	..	36	25	62	41	..	11	..	9
El Salvador	*46*	76	*48*	77	19	12	24	14	..	10	..	10
Eritrea	..	73	..	67	..	..	..	..	..	5	..	4
Estonia	..	96	..	97	..	..	..	..	..	12	..	13
Ethiopia	..	57	..	53	59	47	78	51	..	..	..	..
Finland	..	100	..	100	..	..	..	..	..	15	..	16
France	..	..	..	..	..	..	..	..	13	15	13	16
Gabon	57	58	56	61	..	..	..	..	..	..	..	..
Gambia, The	74	78	71	83	64	39	79	55	..	6	..	4
Georgia	..	..	..	..	..	..	..	..	..	10	..	10
Germany	..	..	..	..	..	..	..	..	..	15	..	15
Ghana	..	..	..	..	22	9	48	17	..	..	..	..
Greece	99	..	98	..	1	0	1	0	12	14	12	14
Guatemala	..	52	..	47	26	16	43	29	..	..	..	..
Guinea	*59*	..	*41*	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	50	32	86	66	..	..	..	..
Haiti	*33*	..	*34*	..	53	40	57	41	..	..	..	..
Honduras	..	..	..	..	29	22	29	21	..	..	..	..

Education outcomes 2.11

	Percentage of cohort reaching grade 5				Youth illiteracy rate				Expected years of schooling			
	Male		Female		Male % aged 15–24		Female % aged 15–24		Males		Females	
	1980	1996	1980	1996	1980	1997	1980	1997	1980	1995	1980	1995
Hungary	96	..	97	..	0	0	0	0	9	12	10	13
India	..	..	..	..	32	23	61	44	..	..	..	..
Indonesia	..	..	..	..	7	2	15	4	..	10	..	10
Iran, Islamic Rep.	..	..	..	..	16	5	35	10	..	..	..	..
Iraq	*77*	..	*64*	..	..	..	..	..	12	9	9	7
Ireland	..	..	..	..	..	..	..	..	11	14	11	14
Israel	..	..	..	..	1	0	3	1	..	..	..	..
Italy	99	100	99	100	0	0	0	0	..	..	..	..
Jamaica	*91*	..	*91*	..	17	11	8	4	..	11	..	11
Japan	100	..	100	..	..	..	..	..	13	14	12	14
Jordan	*92*	..	*94*	..	4	2	14	0	12	..	12	..
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kenya	60	..	62	..	13	5	32	8	..	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	94	100	94	100	0	0	0	0	12	15	11	14
Kuwait	..	..	..	..	17	9	23	8	..	9	..	9
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	8	..	6
Latvia	..	..	..	..	0	0	0	0	..	11	..	12
Lebanon	..	..	..	..	7	3	18	8	..	..	..	..
Lesotho	50	..	68	..	29	18	5	2	..	8	..	9
Libya	..	..	..	..	5	0	39	10	..	..	..	..
Lithuania	..	..	..	..	0	0	0	0	..	..	..	..
Macedonia, FYR	..	95	..	95	..	..	..	..	..	10	..	10
Madagascar	..	49	..	33	..	..	..	..	..	..	..	..
Malawi	48	..	40	..	29	20	60	42	..	..	..	..
Malaysia	97	..	97	..	8	3	15	3	..	..	..	..
Mali	*48*	87	*42*	82	66	34	83	49	..	..	..	..
Mauritania	..	61	..	68	53	44	84	62	..	..	..	..
Mauritius	*94*	98	*94*	99	11	8	16	7	..	..	..	..
Mexico	..	85	..	86	6	3	9	5	..	..	..	..
Moldova	..	..	..	..	0	0	0	0	..	..	..	..
Mongolia	..	..	..	..	..	..	..	..	..	6	..	8
Morocco	79	79	78	77	43	26	72	47	..	..	..	..
Mozambique	..	52	..	39	38	28	79	59	5	4	4	3
Myanmar	..	..	..	..	11	9	19	11	..	..	..	..
Namibia	..	..	..	..	18	11	20	8	..	..	..	..
Nepal	..	..	..	..	48	27	86	62	..	..	..	..
Netherlands	94	..	98	..	..	..	..	..	14	16	13	15
New Zealand	94	..	94	..	..	..	..	..	14	16	13	17
Nicaragua	*40*	..	*47*	..	37	33	37	32	8	9	9	9
Niger	74	72	72	74	82	71	95	88	..	..	..	..
Nigeria	..	..	..	..	32	13	57	20	..	..	..	..
Norway	100	100	100	100	..	..	..	..	13	15	13	15
Oman	*96*	96	*87*	96	18	1	64	7	5	9	2	8
Pakistan	..	..	..	..	48	31	79	61	..	..	..	..
Panama	74	..	79	..	5	3	7	4	11	..	11	..
Papua New Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Paraguay	59	..	58	..	6	3	7	3	..	9	..	9
Peru	78	..	74	..	5	2	13	6	11	13	10	12
Philippines	*68*	..	*73*	..	5	2	5	2	10	11	11	11
Poland	..	..	..	..	0	0	0	0	12	13	12	13
Portugal	..	..	..	..	2	0	2	0	..	14	..	15
Puerto Rico	..	..	..	..	6	3	4	2	..	..	..	..
Romania	..	..	..	..	1	1	1	0	..	12	..	11
Russian Federation	..	..	..	..	0	0	0	0	..	..	..	..

2.11 Education outcomes

	Percentage of cohort reaching grade 5				Youth illiteracy rate				Expected years of schooling			
	Male		Female		Male % aged 15–24		Female % aged 15–24		Males		Females	
	1980	**1996**	**1980**	**1996**	**1980**	**1997**	**1980**	**1997**	**1980**	**1995**	**1980**	**1995**
Rwanda	*55*	..	*59*	..	32	16	51	21	..	..	..	..
Saudi Arabia	82	87	86	92	16	6	40	12	7	9	5	8
Senegal	89	89	82	81	59	43	79	62	..	..	..	..
Sierra Leone	..	..	..	..	..	..	..	..	..	..	..	..
Singapore	*100*	..	*100*	..	2	1	3	0	11	..	11	..
Slovak Republic	..	..	..	..	..	..	..	..	..	..	..	..
Slovenia	..	..	..	..	0	0	0	0	..	..	..	..
South Africa	..	72	..	79	15	10	15	10	..	13	..	13
Spain	95	..	94	..	1	0	1	0	13	15	12	16
Sri Lanka	*92*	83	*91*	84	6	3	9	4	..	..	..	..
Sudan	68	..	71	..	36	19	66	33	..	..	..	..
Sweden	98	98	99	97	..	..	..	..	12	14	13	15
Switzerland	..	..	..	..	..	..	..	..	14	15	13	14
Syrian Arab Republic	93	93	88	94	13	5	47	25	11	10	8	9
Tajikistan	..	..	..	..	0	0	0	0	..	..	..	..
Tanzania	89	..	90	..	18	8	43	15	..	..	..	..
Thailand	..	..	..	..	3	1	4	2	..	..	..	..
Togo	59	..	45	..	32	15	68	11	..	..	..	..
Trinidad and Tobago	85	..	87	..	1	0	1	0	11	10	11	11
Tunisia	89	90	84	92	12	4	41	15	10	..	7	..
Turkey	..	..	..	..	6	2	25	8	..	11	..	9
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	*82*	..	*73*	..	27	16	53	31	..	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	100	..	100	..	26	14	22	7	8	10	7	10
United Kingdom	..	..	..	..	..	..	..	..	13	16	13	17
United States	..	..	..	..	..	..	..	..	14	15	15	16
Uruguay	..	97	..	99	2	1	1	0	..	..	..	..
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	..	86	..	92	6	3	6	2	..	10	..	11
Vietnam	..	..	..	..	4	3	7	3	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	45	19	89	61	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	88	..	82	..	18	10	35	18	..	8	..	7
Zimbabwe	*82*	78	*76*	79	7	0	14	2	..	..	..	..
World	.. w	.. w	.. w	.. w	17 w	12 w	31 w	20 w				
Low income	..	..	..	..	34	23	59	41				
Middle income	..	..	..	..	7	4	15	6				
Lower middle income	..	..	..	..	6	3	16	7				
Upper middle income	..	..	..	..	9	5	12	6				
Low & middle income	..	..	..	..	17	12	32	21				
East Asia & Pacific	..	93	..	94	5	2	15	4				
Europe & Central Asia	..	..	..	..	1	1	5	2				
Latin America & Carib.	..	..	..	..	11	7	11	6				
Middle East & N. Africa	*88*	..	*84*	..	26	14	52	27				
South Asia	..	..	..	..	36	25	64	48				
Sub-Saharan Africa	..	..	..	..	34	20	55	29				
High income	..	..	..	..	..	..	..	..				
Europe EMU	..	..	..	..	..	..	..	..				

Education outcomes 2.11

About the data

Indicators of students' progress through school, estimated by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), provide a measure of an education system's success in maintaining a flow of students from one grade to the next and thus in imparting a particular level of education. Although school attendance is mandatory in most countries, at least through the primary level, students drop out of school for a variety of reasons, including discouragement over poor performance, the cost of schooling, and the opportunity cost of time spent in school. In addition, students' progress to higher grades may be limited by the availability of teachers, classrooms, and educational materials.

The rate of progression—sometimes called the rate of persistence or survival—is estimated as the proportion of a single-year cohort of students that eventually reaches a particular grade of school. It measures the holding power and internal efficiency of an education system. It illustrates the situation regarding the retention of pupils and, conversely, the magnitude of dropouts. Progression rates approaching 100 percent indicate a high level of retention and a low level of dropout.

Because tracking data for individual students generally are not available, aggregate student flows from one grade to the next are estimated using data on enrollment and repetition by grade for two consecutive years. This procedure, called the reconstructed cohort method (Fredricksen 1993), makes three simplifying assumptions: dropouts never return to school; promotion, repetition, and dropout rates remain constant over the entire period in which the cohort is enrolled in school; and the same rates apply to all pupils enrolled in a given grade, regardless of whether they previously repeated a grade. Given these assumptions, cross-country comparisons should be made with caution, because other flows—caused by new entrants, reentrants, grade skipping, migration, or school transfers during the school year—are not considered.

The percentage of the cohort reaching grade 5, rather than some other grade, is shown because it is generally agreed that children who reach grade 5 should have acquired the basic literacy and numeracy skills that would enable them to continue learning. This indicator provides no information on learning outcomes, however, and only indirectly reflects the quality of schooling. Assessing learning outcomes requires setting standards and measuring the attainment of those standards. In general, national assessments are concerned with the performance not of individual students, but of all or part of the education system.

The youth illiteracy rate measures the accumulated outcomes of primary education over the previous 10 years or so, by indicating the proportion of people who have passed through the primary education system but have not acquired the basic literacy and numeracy skills, for reasons that may include inability to access schooling, dropping out before reaching grade 5, and failures in achieving basic learning competencies.

Although the illiteracy rate is defined as the percentage of people who cannot, with understanding, read and write a short, simple statement about their everyday life, it is in practice difficult to define and to measure. To estimate illiteracy using such a definition requires census or sample survey measurements under controlled conditions. In practice, many countries estimate the number of illiterate people from self-reported data, or by taking people with no schooling as illiterate.

Literacy statistics for most countries cover the population aged 15 and above, by five-year age groups, but some include younger ages or are confined to age ranges that tend to inflate literacy rates. As an alternative, UNESCO has proposed a narrower age range of 15–24, which better captures the ability of recent participants in the formal education system.

Going beyond primary education, the indicator expected years of schooling is an estimate of the total years of schooling that an average child at the school-entry age will receive, given the current patterns of enrollments across cycles of education. It may also be interpreted as an indicator of the total education resources, measured in school years, that a child will acquire over his or her "lifetime" in school. Because the calculation of this indicator assumes that the probability of a child's being enrolled in school at any future age is equal to the current enrollment ratio for that age, changes and trends in future enrollment ratios are not accounted for.

Definitions

• **Percentage of cohort reaching grade 5** is the share of children enrolled in primary school who eventually reach grade 5. The estimate is based on the reconstructed cohort method (see *About the data*). • **Youth illiteracy rate** is the percentage of people aged 15–24 who cannot, with understanding, read and write a short, simple statement about their everyday life. • **Expected years of schooling** are the average number of years of formal schooling that a child is expected to receive, including university education and years spent in repetition. They are the sum of the underlying age-specific enrollment ratios for primary, secondary, and tertiary education.

Data sources

The data shown in the table were compiled by UNESCO and are published in UNESCO's *World Education Report 1998* and *Statistical Yearbook 1998*. The data on youth illiteracy are based on the results of the 1998 UNESCO literacy estimates and projections.

2.12 Gender and education

	Primary education				Secondary education				Tertiary education			
	Female teachers % of total		Female pupils % of total		Female teachers % of total		Female pupils % of total		Female teachers % of total		Female pupils % of total	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Albania	50	*60*	47	*48*	35	*51*	..	*49*	20	31	50	57
Algeria	37	45	42	46	..	45	39	48	..	..	*30*	..
Angola	..	..	*47*	..	..	..	*33*	..	..	..	*15*	..
Argentina	*92*	*89*	49	49	..	*66*	..	..	43	..	50	..
Armenia	..	*97*	..	*51*	..	*44*	..	*52*	..	*41*	..	56
Australia	*70*	76	49	49	45	..	50	49	..	..	45	51
Austria	75	*83*	49	*49*	49	*55*	..	*47*	15	*26*	42	48
Azerbaijan	..	80	..	*48*	..	..	..	*48*	..	..	42	50
Bangladesh	8	..	37	..	7	..	*19*	..	11	..	14	..
Belarus	..	..	..	48	..	..	..	..	..	..	..	55
Belgium	59	*72*	49	*48*	..	*53*	*50*	*51*	..	*36*	44	49
Benin	23	24	32	*36*	..	..	..	..	..	*12*	*19*	19
Bolivia	48	..	47	..	..	..	43	..	..	..	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	72	77	55	50	37	*43*	55	*52*	..	28	35	47
Brazil	85	..	..	..	53	..	54	..	30	*38*	48	53
Bulgaria	72	89	49	48	53	72	48	*50*	39	41	56	61
Burkina Faso	20	*24*	37	*39*	..	..	*34*	*35*	*14*	..	22	23
Burundi	47	*50*	39	*45*	*20*	..	37	..	..	..	25	..
Cambodia	..	36	..	45	..	27	..	..	..	17	..	16
Cameroon	20	*32*	45	..	*20*	..	35	..	..	..	..	..
Canada	*66*	*67*	49	*48*	*44*	*67*	*49*	*49*	24	*34*	50	53
Central African Republic	25	..	37	..	16	..	..	..	15	..	8	..
Chad	..	8	..	34	..	4	..	*0*	..	..	..	13
Chile	..	72	49	49	..	*52*	*52*	51	..	..	43	45
China	37	47	..	47	25	36	..	*44*	..	*30*	..	33
Hong Kong, China	73	*76*	48	*49*	49	*50*	49	*49*	*16*	*25*	*31*	43
Colombia	79	77	50	49	42	48	..	*53*	20	*28*	45	52
Congo, Dem. Rep.	..	*22*	42	*41*	..	*10*	..	*38*	..	..	..	..
Congo, Rep.	25	*36*	48	*48*	..	*16*	..	..	9	..	15	..
Costa Rica	*79*	78	49	49	*54*	59	53	..	..	..	..	..
Côte d'Ivoire	15	*21*	40	43	..	..	..	..	..	..	..	24
Croatia	*73*	89	..	49	..	*63*	..	*51*	..	34	..	51
Cuba	75	81	48	48	46	57	..	*52*	*38*	45	48	60
Czech Republic	..	*93*	..	*48*	..	*61*	..	*50*	..	*52*	40	47
Denmark	..	*58*	49	*49*	..	*52*	49	*49*	..	*30*	49	55
Dominican Republic	..	*71*	*52*	*50*	..	*49*	..	*57*	..	32	..	57
Ecuador	65	67	49	49	*38*	..	..	..	..	..	..	..
Egypt, Arab Rep.	*47*	49	40	45	31	39	..	45	..	..	32	..
El Salvador	65	..	49	49	27	..	..	*52*	23	29	31	50
Eritrea	..	36	..	45	..	14	..	42	..	*13*	..	13
Estonia	..	*89*	..	*48*	..	*80*	..	*52*	..	49	55	53
Ethiopia	22	*28*	35	*36*	..	*10*	..	11	*8*	*6*	*13*	19
Finland	..	..	49	*49*	..	..	..	*53*	..	..	48	53
France	68	*79*	48	*48*	*55*	*58*	52	*49*	..	*33*	*48*	55
Gabon	27	*39*	49	*50*	24	*18*	..	16	*13*	..	*26*	..
Gambia, The	32	*29*	35	*44*	25	*17*	*30*	..	..	*23*	..	36
Georgia	89	95	..	48	54	71	..	49	..	..	47	51
Germany	..	*81*	..	*49*	..	*49*	..	*48*	..	*29*	..	45
Ghana	42	..	44	..	21	..	..	..	..	..	*21*	..
Greece	48	*56*	48	*48*	49	*55*	*46*	*49*	32	*34*	41	48
Guatemala	*62*	..	45	46	*36*	..	..	..	..	..	..	..
Guinea	14	*25*	33	*34*	*10*	..	..	..	3	4	19	11
Guinea-Bissau	24	..	32	..	21	..	20	..	..	..	..	..
Haiti	49	..	46	..	..	..	..	..	11	..	30	..
Honduras	74	*73*	50	*50*	48	..	..	..	*29*	*29*	38	44

Gender and education 2.12

	Primary education				Secondary education				Tertiary education			
	Female teachers % of total		Female pupils % of total		Female teachers % of total		Female pupils % of total		Female teachers % of total		Female pupils % of total	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Hungary	80	*92*	49	*48*	..	*66*	..	*50*	29	*31*	50	53
India	26	33	39	*43*	..	..	..	..	..	..	26	36
Indonesia	*33*	*52*	46	*48*	..	*37*	..	*45*	*17*	..	*31*	35
Iran, Islamic Rep.	*57*	55	*40*	47	*30*	44	..	46	*19*	18	*30*	36
Iraq	48	*71*	46	*45*	40	*56*	32	..	17	..	32	..
Ireland	74	*78*	49	*49*	*50*	*54*	52	*50*	..	*37*	41	51
Israel	..	*84*	*49*	*49*	57	*65*	..	48	..	..	51	..
Italy	87	*94*	49	*48*	58	*64*	..	..	..	*32*	43	53
Jamaica	87	90	50	..	66	..	53	..	..	..	..	..
Japan	57	62	49	*49*	26	*33*	49	*49*	14	*22*	33	44
Jordan	59	*61*	48	*49*	43	*45*	45	*47*	*16*	18	46	47
Kazakhstan	..	*97*	..	49	..	..	..	..	..	..	..	55
Kenya	*31*	*40*	47	*49*	..	..	..	..	..	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	37	61	49	48	26	39	45	48	15	24	*26*	37
Kuwait	56	*71*	48	49	50	*54*	*46*	*50*	23	*19*	57	62
Kyrgyz Republic	88	*83*	..	*49*	..	*67*	..	*51*	..	..	..	52
Lao PDR	30	42	45	*43*	..	*38*	..	*39*	18	29	31	30
Latvia	..	95	..	48	..	79	..	51	..	49	57	60
Lebanon	..	..	..	32	..	..	..	..	*31*	*33*	36	49
Lesotho	75	79	59	52	..	53	60	59	..	..	*50*	54
Libya	47	..	47	..	24	..	40	..	..	..	25	..
Lithuania	97	91	..	48	..	87	..	*50*	..	47	55	59
Macedonia, FYR	..	54	..	48	..	51	..	48	..	41	..	54
Madagascar	..	*51*	49	*49*	..	..	..	*33*	..	*29*	..	45
Malawi	*32*	*39*	41	*47*	..	*1*	..	*21*	..	..	27	30
Malaysia	44	60	49	*49*	45	60	..	..	26	..	39	..
Mali	20	*23*	36	*40*	..	..	..	..	..	..	11	..
Mauritania	9	*20*	35	47	..	*11*	..	5	..	..	..	17
Mauritius	43	51	49	49	..	45	..	..	15	*31*	31	49
Mexico	..	..	49	*48*	..	..	..	*48*	..	..	33	47
Moldova	96	97	..	49	..	73	..	*52*	..	45	..	55
Mongolia	87	90	*50*	51	59	66	..	57	40	36	61	69
Morocco	30	38	37	42	*26*	32	38	..	*18*	..	*20*	41
Mozambique	22	*23*	*43*	*42*	*22*	*17*	*28*	*39*	..	*21*	*20*	24
Myanmar	*54*	*67*	..	..	..	*73*	..	..	..	..	..	61
Namibia	..	..	..	50	..	..	..	..	..	..	..	61
Nepal	10	*16*	28	..	9	..	..	..	16	..	22	..
Netherlands	46	*65*	49	..	..	*31*	48	*47*	..	*24*	40	47
New Zealand	*66*	82	49	49	..	57	49	50	18	40	41	56
Nicaragua	78	*84*	51	*50*	..	..	53	*53*	..	*36*	*47*	51
Niger	30	32	35	38	21	14	29	35	13	..	20	..
Nigeria	34	*46*	*43*	*44*	29	*36*	..	21	..	..	..	..
Norway	*56*	..	49	*49*	..	..	50	*47*	19	..	48	55
Oman	34	*50*	34	48	*27*	48	24	49	..	..	*7*	46
Pakistan	32	..	33	..	30	..	..	15	*12*	..	*17*	..
Panama	80	..	48	..	53	..	52	..	*32*	*36*	55	59
Papua New Guinea	27	*36*	*42*	*45*	*32*	..	..	*39*	..	..	22	32
Paraguay	..	..	48	48	..	*66*	..	51	..	..	..	55
Peru	60	*58*	48	*49*	*46*	*39*	*46*	*48*	..	..	35	..
Philippines	80	..	49	..	..	..	53	..	53	..	53	57
Poland	..	..	..	*48*	..	..	50	*49*	..	..	56	57
Portugal	..	..	48	*48*	59	..	..	*51*	31	..	48	57
Puerto Rico	..	..	..	..	..	..	..	..	..	..	59	..
Romania	70	85	..	49	43	63	..	49	30	38	43	53
Russian Federation	98	*98*	..	*49*	..	..	..	..	..	..	56	56

2.12 Gender and education

	Primary education				Secondary education				Tertiary education			
	Female teachers % of total		Female pupils % of total		Female teachers % of total		Female pupils % of total		Female teachers % of total		Female pupils % of total	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Rwanda	38	..	48	..	16	..	..	..	9	..	10	..
Saudi Arabia	39	52	39	48	34	50	38	*46*	19	30	28	47
Senegal	24	*26*	40	45	..	..	..	..	..	..	18	..
Sierra Leone	*22*	..	..	..	..	..	..	*27*	..	..	..	..
Singapore	66	*77*	48	*48*	..	..	..	..	19	*31*	39	44
Slovak Republic	..	91	..	49	..	70	..	*50*	..	38	..	50
Slovenia	..	92	..	49	51	70	..	*49*	18	28	54	56
South Africa	..	74	..	49	..	*64*	..	54	..	*37*	..	48
Spain	67	*66*	49	*48*	40	*52*	50	..	21	*32*	44	53
Sri Lanka	..	96	48	48	..	*62*	..	*51*	..	*34*	*43*	44
Sudan	31	62	40	45	..	45	..	16	8	..	27	..
Sweden	..	*72*	49	*49*	..	*58*	*52*	*53*	..	*36*	..	55
Switzerland	..	*69*	49	*49*	..	..	46	*47*	..	..	30	38
Syrian Arab Republic	54	65	43	47	*22*	44	37	46	..	..	29	41
Tajikistan	..	54	..	49	..	..	..	..	..	..	..	33
Tanzania	37	44	47	49	*28*	26	..	*44*	*5*	*11*	*21*	16
Thailand	..	..	48	..	..	..	..	..	..	..	..	..
Togo	21	14	39	*41*	..	*12*	..	..	12	*8*	15	15
Trinidad and Tobago	66	*74*	50	*49*	..	..	*50*	..	..	..	43	..
Tunisia	29	49	42	47	29	38	37	..	9	27	30	45
Turkey	41	*44*	45	*47*	*35*	*40*	..	*39*	25	*33*	*26*	38
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	30	*32*	*43*	*46*	*19*	*19*	..	18	*7*	*19*	23	33
Ukraine	97	*98*	..	*49*	..	..	..	..	..	..	..	56
United Arab Emirates	54	70	48	48	*46*	*54*	..	50	8	..	49	..
United Kingdom	*78*	*80*	49	49	..	*55*	50	*52*	*14*	*30*	37	50
United States	..	*86*	49	*49*	..	*56*	..	*49*	26	*39*	51	56
Uruguay	..	..	48	49	..	..	..	..	30	..	53	..
Uzbekistan	78	*82*	..	*49*	..	..	..	..	..	..	..	..
Venezuela	*83*	*75*	*51*	50	..	*53*	*57*	58	*28*	..	..	..
Vietnam	65	..	47	..	..	..	..	..	22	*31*	24	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	17	..	28	..	..	..	*18*	..	..	..	13
Yugoslavia, FR (Serb./Mont.)	..	..	..	49	..	..	..	..	..	*35*	..	54
Zambia	40	*43*	47	*48*	..	..	..	*38*	..	..	*21*	30
Zimbabwe	*38*	44	*48*	49	..	36	..	*44*	*17*	..	..	36
World	**44 w**	***50* w**	**.. w**	***46* w**	**.. w**	**.. w**	**..**	**.. w**	**..**	**.. w**	**.. w**	**.. w**
Low income	28	*35*	40	*43*	..	..	..	..	..	..	25	..
Middle income	52	*51*	..	*48*	..	*38*	..	..	..	..	..	39
Lower middle income	50	51	..	47	*28*	38	..	*45*	..	..	..	37
Upper middle income	..	..	..	..	..	..	..	..	..	..	44	48
Low & middle income	42	*44*	..	*46*	..	..	..	..	..	..	..	..
East Asia & Pacific	40	48	..	47	25	37	..	*44*	..	*30*	..	33
Europe & Central Asia	84	*85*	..	*48*	..	..	..	..	..	..	..	50
Latin America & Carib.	..	..	..	..	..	..	..	..	..	..	43	..
Middle East & N. Africa	*46*	48	42	45	*32*	42	..	..	..	..	*29*	..
South Asia	24	34	38	*43*	..	..	..	..	..	..	25	36
Sub-Saharan Africa	30	*38*	*44*	*45*	..	..	..	..	..	..	..	..
High income	..	*77*	49	*49*	..	*55*	..	*49*	..	*31*	44	51
Europe EMU	72	*81*	49	*48*	..	*55*	..	*49*	..	*30*	*46*	50

Gender and education 2.12

About the data

Data on female enrollment levels suffer from the same problems affecting data on general enrollment discussed in *About the data* for table 2.10. But female enrollment as a share of total enrollment is a relatively simple indicator raising no serious problems of cross-country comparability.

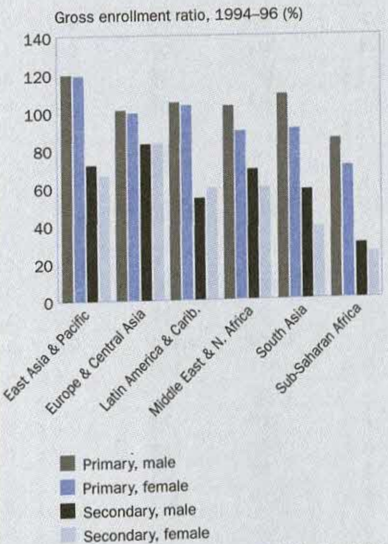
Because disparities in enrollment are not correlated with an overall standard of living, such as GNP per capita, countries can achieve gender parity in primary and secondary schooling if public policies and education strategies address constraints that inhibit female attendance. Providing segregated schools and separate sanitation facilities, recruiting female teachers, and reducing the direct and opportunity costs of educating girls are among the strategies that have worked in some countries (see box 2a). But disparities remain, and female enrollment ratios tend to be positively correlated with other indicators of development, such as maternal and child health and total fertility rates (UNRISD 1977).

Girls' enrollments have caught up with boys' in most high-income, Latin America and Caribbean, and Eastern European countries. But they lag behind in South Asia and the Middle East. And regional aggregates mask large disparities between countries. In Africa, for example, although Mauritius and South Africa have achieved nearly universal primary enrollment, a significant number of countries still have primary enrollment ratios for girls that are less than 50 percent (table 1.2). In low-income and lower-middle-income countries dropout rates at the primary level are higher for girls than for boys, indicating that the gap in actual enrollment in these countries is wider than is reflected by enrollment ratios. One reason for this is early child-bearing in many of these countries, which is clearly incompatible with schooling. Many girls, especially in South Asia, still remain outside the formal education system. And girls who attend school tend to be directed away from science, mathematics, and other technical subjects in high demand in the labor market.

Limited employment opportunities and lower market returns for women discourage parents of girls from investing in education. Consequently, female participation in the labor market is limited, with many women concentrated in the informal sector and those in the modern sector relegated to the low end of the hierarchy. Ensuring that the market is competitive, making labor laws gender-neutral, and strengthening the machinery that enforces labor laws can improve women's employment prospects. Traditionally, teaching has been one of the first professions open to women, and the number of female teachers is a revealing indicator of employment opportunities for women in the modern sector. In addition, female teachers are important role models for girls, particularly where female education is not encouraged or men are forbidden to teach girls. Over the past decade the share of female primary school teachers has increased everywhere. But data on teachers may not reflect the functions they perform. Schools may employ teachers in many capacities outside the classroom, and the responsibilities assigned to male and female teachers may differ systematically.

Figure 2.12

Girls' enrollments continue to lag



Note: Regional averages are unweighted for Latin America and the Caribbean, and for secondary enrollment ratios in Europe and Central Asia.
Source: UNESCO.

Education for All efforts over the past decade have significantly increased enrollments at the primary level. Nevertheless, girls' enrollments continue to lag behind boys' in most regions. A big part of the reason in many developing countries is the poor quality of education inputs and processes, which increases the opportunity cost of girls' time in school. High dropout and low persistence highlight the need to improve school quality and to design interventions that take into account the barriers girls face in attending postprimary school (see box 2a).

Definitions

- **Female teachers as a percentage of total teachers** includes full-time and part-time teachers.
- **Female pupils as a percentage of total pupils** includes enrollments in public and private schools.

Data sources

The estimates in this table were compiled using the United Nations Educational, Scientific, and Cultural Organization's electronic database on institutions, teachers, and pupils.

2.13 Health expenditure, services, and use

	Health expenditure			Health expenditure per capita		Physicians		Hospital beds		Inpatient admission rate	Average length of stay	Outpatient visits per capita
	Public % of GDP	Private % of GDP	Total % of GDP	PPP $	$	per 1,000 people		per 1,000 people		% of population	days	
	1990–97[a]	1990–97[a]	1990–97[a,b]	1990–97[a]	1990–97[a]	1980	1990–97[a]	1980	1990–97[a]	1990–97[a]	1990–97[a]	1990–97[a]
Albania	2.5	..	..	..	..	..	1.4	..	3.2	..	13	2
Algeria	3.3	1.3	4.6	210	85	..	0.8	..	2.1	..	..	..
Angola	3.9	..	..	..	..	..	0.1	..	1.3	..	..	..
Argentina	4.3	5.4	9.7	931	799	..	2.7	..	4.6	..	..	..
Armenia	3.1	4.7	7.8	156	27	3.5	3.1	8.4	7.6	8	15	3
Australia	5.8	2.7	8.5	1,786	1,798	1.8	2.2	..	8.9	17	16	7
Austria	5.7	2.2	7.9	1,747	2,012	*2.3*	3.5	11.2	9.3	25	11	6
Azerbaijan	1.1	5.0	6.2	92	31	3.4	3.9	9.7	9.9	6	18	1
Bangladesh	1.2	1.3	2.4	24	6	0.1	0.2	0.2	0.3	..	..	..
Belarus	5.2	1.1	6.4	269	134	3.4	4.2	12.5	12.3	26	18	11
Belgium	6.7	0.9	7.6	1,748	1,816	2.5	3.8	*9.4*	7.6	20	12	8
Benin	1.7	..	..	..	..	0.1	0.1	1.5	0.2	..	..	..
Bolivia	3.8	2.7	6.5	194	54	*0.5*	0.4	..	1.4	..	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	0.9	..	3.1	..	15	..
Botswana	1.8	1.4	3.1	..	..	0.1	0.3	2.4	1.6	..	..	..
Brazil	1.9	4.9	6.8	382	351	*0.8*	1.4	..	3.0	0[c]	..	2
Bulgaria	3.5	1.4	6.7	287	68	2.5	3.5	11.1	10.6	18	14	5
Burkina Faso	4.7	3.2	5.5	49	17	0.0	0.0	..	0.3	..	..	..
Burundi	1.0	..	..	..	..	..	0.1	..	0.7	..	..	..
Cambodia	0.7	6.5	7.2	..	18	..	0.1	..	2.1	..	..	..
Cameroon	1.0	0.4	1.4	24	7	..	0.1	..	2.6	..	..	..
Canada	6.3	2.9	9.2	2,112	1,829	*1.8*	2.2	..	5.1	13	12	7
Central African Republic	2.0	..	..	..	..	0.0	0.0	1.6	0.9	..	..	..
Chad	1.6	0.1	2.7	33	6	..	0.0	..	0.7	..	..	..
Chile	2.3	3.7	7.9	783	295	..	1.1	3.4	3.2	..	..	..
China	2.1	1.8	3.8	90	19	0.9	1.6	2.0	2.4	4	15	..
Hong Kong, China	2.3	2.8	5.0	1,170	1,134	0.8	1.3	4.0	..	2	..	1
Colombia	2.9	4.4	7.4	477	140	..	0.9	1.6	1.3	..	..	..
Congo, Dem. Rep.	0.2	..	..	..	..	..	0.1	..	1.4	..	..	..
Congo, Rep.	1.8	3.2	6.3	116	77	*0.1*	0.3	..	3.3	..	..	..
Costa Rica	6.0	2.2	8.5	544	215	..	0.9	3.3	2.5	..	..	..
Côte d'Ivoire	1.4	2.1	3.5	57	25	..	0.1	..	0.8	..	..	..
Croatia	8.4	1.6	9.9	414	302	..	2.1	..	5.9	12	..	..
Cuba	7.9	..	..	..	..	*1.4*	3.6	..	5.4	..	..	..
Czech Republic	6.4	0.6	7.0	806	360	..	3.0	..	6.7	19	12	15
Denmark	5.1	2.7	7.8	1,811	2,388	*2.4*	2.9	..	4.9	20	7	5
Dominican Republic	1.8	3.9	5.7	227	77	..	1.1	..	2.0	..	..	..
Ecuador	2.0	3.2	5.3	259	78	..	1.5	1.9	1.6	..	..	..
Egypt, Arab Rep.	1.7	2.1	3.7	103	38	1.1	1.8	2.0	2.1	3	10	5
El Salvador	2.4	3.4	5.9	153	86	0.3	0.7	..	1.4	..	..	..
Eritrea	1.1	0.9	2.0	..	..	..	0.0	..	..	..	..	..
Estonia	5.8	..	..	..	..	4.2	3.0	12.4	8.1	18	12	6
Ethiopia	1.6	1.0	2.6	13	3	0.0	0.0	0.3	0.2	..	..	..
Finland	5.7	1.7	7.4	1,409	1,666	1.9	2.8	15.5	9.3	26	12	4
France	7.7	2.1	9.8	2,086	2,349	*2.2*	2.8	..	8.9	23	11	6
Gabon	0.6	..	..	..	..	*0.5*	0.5	..	3.2	..	..	..
Gambia, The	2.0	..	..	..	..	..	0.0	..	0.6	..	..	..
Georgia	0.6	..	..	..	..	4.8	3.5	10.7	4.8	5	13	2
Germany	8.1	2.4	10.4	2,235	2,677	2.2	3.4	..	9.7	21	14	6
Ghana	2.9	0.1	1.7	31	6	..	0.1	..	1.5	..	..	..
Greece	5.3	1.8	7.1	843	803	2.4	3.9	6.2	5.0	15	8	..
Guatemala	1.7	1.5	3.2	111	41	..	0.3	..	1.2	..	..	..
Guinea	1.2	..	..	..	..	*0.0*	0.1	..	0.6	..	..	..
Guinea-Bissau	1.1	..	..	..	..	0.1	0.2	1.8	1.5	..	..	..
Haiti	1.2	2.3	3.6	44	14	*0.1*	0.1	0.7	0.8	..	..	..
Honduras	2.8	2.8	5.6	106	33	*0.3*	0.4	1.3	1.1	..	..	..

Health expenditure, services, and use 2.13

	Health expenditure			Health expenditure per capita		Physicians		Hospital beds		Inpatient admission rate	Average length of stay	Outpatient visits per capita
	Public % of GDP 1990–97[a]	Private % of GDP 1990–97[a]	Total % of GDP 1990–97[a,b]	PPP $ 1990–97[a]	$ 1990–97[a]	per 1,000 people 1980	per 1,000 people 1990–97[a]	per 1,000 people 1980	per 1,000 people 1990–97[a]	% of population 1990–97[a]	days 1990–97[a]	1990–97[a]
Hungary	4.5	2.0	6.5	459	291	2.5	3.4	9.1	9.0	24	11	10
India	0.7	4.4	5.6	64	18	0.4	0.4	0.8	0.8	..	..	..
Indonesia	0.7	1.2	1.8	54	17	*0.1*	0.2	..	0.7	..	..	..
Iran, Islamic Rep.	1.7	2.5	4.2	210	89	*0.3*	0.3	1.5	1.4	..	..	..
Iraq	..	..	..	..	..	0.6	0.6	1.9	1.7	..	..	..
Ireland	5.1	1.7	6.7	1,331	1,337	1.3	2.1	9.7	5.0	16	7	..
Israel	0.3	0.3	4.1	651	551	*2.5*	3.8	5.1	6.0	..	..	..
Italy	5.3	2.3	7.6	1,589	1,515	*1.3*	1.7	..	6.4	16	10	..
Jamaica	2.5	2.4	4.9	176	76	*0.4*	0.5	..	2.1	..	..	..
Japan	5.7	1.7	7.3	1,670	2,442	*1.4*	1.8	11.3	16.2	9	44	16
Jordan	3.7	4.2	7.9	261	117	0.8	1.6	1.3	1.6	11	3	3
Kazakhstan	2.5	0.8	3.3	107	42	3.2	3.6	13.2	10.3	15	16	1
Kenya	1.9	1.0	2.6	28	8	*0.1*	0.1	..	1.6	..	..	..
Korea, Dem. Rep.	..	..	..	..	..	*2.5*	..	..	..	..	..	..
Korea, Rep.	2.3	1.7	4.0	522	397	0.6	1.2	1.7	4.4	6	13	10
Kuwait	3.5	..	..	..	..	1.7	0.2	4.1	..	..	..	..
Kyrgyz Republic	2.9	..	..	..	..	2.9	3.3	12.0	8.8	21	15	1
Lao PDR	1.3	1.3	2.6	31	10	..	0.2	..	2.6	..	..	..
Latvia	3.5	..	..	..	..	4.1	3.0	13.7	10.3	21	14	3
Lebanon	3.0	7.0	10.0	..	87	*1.7*	1.9	..	3.1	14	4	..
Lesotho	3.7	..	..	..	..	..	0.1	..	..	..	..	..
Libya	..	..	..	..	..	1.3	1.1	*4.8*	4.2	..	..	..
Lithuania	5.0	..	..	..	..	3.9	4.0	12.1	10.6	30	14	7
Macedonia, FYR	6.2	0.9	8.3	..	171	..	2.3	..	5.2	10	15	3
Madagascar	1.4	..	..	..	..	*0.1*	0.1	..	0.9	..	..	..
Malawi	2.3	..	..	..	..	*0.0*	0.0	..	1.6	..	..	..
Malaysia	1.4	1.5	2.9	317	140	0.3	0.4	*2.3*	2.0	..	..	..
Mali	2.0	1.5	2.7	17	8	0.0	0.1	..	..	..	..	..
Mauritania	1.8	4.1	5.2	81	28	..	0.1	..	0.7	..	..	..
Mauritius	2.2	1.7	4.0	304	116	0.5	0.9	3.1	3.1	0[c]	..	4
Mexico	2.8	1.9	4.7	361	200	*0.9*	1.3	..	1.2	6	4	2
Moldova	6.2	..	..	..	..	3.1	3.6	12.0	12.1	19	18	8
Mongolia	4.3	0.4	4.7	82	26	*9.9*	2.7	11.2	11.5	..	..	5
Morocco	1.2	2.4	3.6	124	49	*0.1*	0.4	*1.2*	1.1	3	3	..
Mozambique	4.6	..	..	..	..	0.0	..	1.1	0.9	..	..	..
Myanmar	0.4	0.1	..	..	..	*0.2*	0.1	0.9	0.6	..	..	..
Namibia	4.1	3.4	6.8	315	127	..	0.3	..	..	..	..	..
Nepal	1.2	3.8	5.0	52	10	0.0	0.1	0.2	0.2	..	..	..
Netherlands	6.2	2.4	8.5	1,784	1,978	*2.1*	2.5	12.5	11.3	11	33	5
New Zealand	5.9	1.7	7.6	1,309	1,348	1.6	2.1	..	7.3	14	7	..
Nicaragua	5.3	3.4	8.6	174	37	0.4	0.6	..	1.8	..	..	..
Niger	1.6	..	..	..	..	..	0.0	..	..	..	..	..
Nigeria	0.2	0.7	1.0	11	5	0.1	0.2	0.9	1.7	..	..	..
Norway	6.2	1.3	7.5	1,844	2,622	1.9	3.1	15.0	13.3	15	10	4
Oman	2.5	..	..	..	..	0.5	0.9	1.6	2.1	1	5	0[c]
Pakistan	0.8	2.7	3.5	45	13	0.3	0.5	0.6	0.7	..	..	3
Panama	4.7	2.0	6.7	457	199	*1.0*	1.8	..	2.5	..	..	..
Papua New Guinea	2.8	..	..	..	..	0.1	0.1	5.5	4.0	..	..	..
Paraguay	1.8	3.3	5.1	173	86	*0.6*	0.3	..	0.6	..	..	..
Peru	2.2	1.5	3.7	156	80	0.7	1.0	..	1.4	0[c]	..	2
Philippines	1.3	1.0	2.4	67	17	0.1	0.1	1.7	1.1	..	..	..
Poland	4.8	0.4	5.2	297	182	1.8	2.3	5.6	6.2	14	11	6
Portugal	4.9	3.3	8.2	1,114	805	*2.0*	3.0	..	4.1	11	10	3
Puerto Rico	..	6.5	..	..	..	..	..	..	..	..	..	..
Romania	2.9	..	..	..	..	1.5	1.8	8.8	7.6	18	10	4
Russian Federation	4.1	0.6	5.8	262	117	4.0	4.1	13.0	11.7	22	17	8

2.13 Health expenditure, services, and use

	Health expenditure			Health expenditure per capita		Physicians		Hospital beds		Inpatient admission rate	Average length of stay	Outpatient visits per capita
	Public % of GDP	Private % of GDP	Total % of GDP	PPP $	$	per 1,000 people		per 1,000 people		% of population	days	
	1990–97[a]	1990–97[a]	1990–97[a,b]	1990–97[a]	1990–97[a]	1980	1990–97[a]	1980	1990–97[a]	1990–97[a]	1990–97[a]	1990–97[a]
Rwanda	1.9	..	..	..	..	0.0	0.0	1.5	1.7	..	..	..
Saudi Arabia	6.4	1.6	8.0	221	161	*0.5*	1.3	*1.5*	2.5	11	11	1
Senegal	1.2	..	..	..	..	*0.1*	0.1	..	0.7	..	..	..
Sierra Leone	1.6	2.0	..	..	..	0.1	..	1.2	..	..	..	..
Singapore	1.5	1.9	3.3	829	943	0.9	1.4	4.2	3.6	12	..	..
Slovak Republic	6.1	..	..	..	..	..	3.0	..	7.5	20	11	12
Slovenia	7.1	..	..	..	..	..	2.1	7.0	5.7	16	11	..
South Africa	3.6	4.3	7.9	542	258	..	0.6	..	..	..	..	..
Spain	5.8	1.6	7.4	1,146	1,003	*2.8*	4.1	..	4.0	10	11	..
Sri Lanka	1.4	0.4	1.9	38	11	0.1	0.1	2.9	2.7	..	..	..
Sudan	..	1.9	0.2	..	4	0.1	..	0.9	1.1	..	..	..
Sweden	7.2	1.4	8.6	1,699	2,222	2.2	3.1	14.8	6.3	18	8	3
Switzerland	7.1	3.1	10.2	2,527	3,603	..	3.2	..	20.8	15	..	11
Syrian Arab Republic	..	..	..	..	..	0.4	0.8	1.1	1.1	..	..	..
Tajikistan	2.4	..	..	..	..	2.4	2.0	10.0	8.8	16	15	..
Tanzania	1.1	..	..	..	..	..	0.0	1.4	0.9	..	..	..
Thailand	2.0	1.9	3.9	230	96	0.1	0.2	1.5	1.7	..	..	..
Togo	1.6	2.2	3.4	59	15	0.1	0.1	..	1.5	..	..	..
Trinidad and Tobago	2.1	1.3	3.4	211	131	0.7	0.7	..	3.2	..	..	..
Tunisia	3.0	2.8	5.9	260	99	0.3	0.6	2.1	1.8	8	..	..
Turkey	2.7	1.1	3.8	227	113	0.6	1.1	2.2	2.5	6	6	1
Turkmenistan	1.2	..	..	..	..	2.9	3.2	10.6	11.5	17	15	..
Uganda	1.9	2.1	3.9	34	9	*0.0*	..	*1.5*	0.9	..	..	..
Ukraine	3.9	..	..	..	..	3.7	4.5	12.5	9.9	20	17	10
United Arab Emirates	2.0	0.5	2.5	390	379	1.1	0.8	2.8	3.1	11	5	..
United Kingdom	5.7	1.0	6.7	1,386	1,454	*1.6*	1.5	9.3	4.7	23	10	6
United States	6.6	7.5	14.1	3,951	4,093	1.8	2.5	5.9	4.1	12	8	6
Uruguay	1.9	6.5	8.5	618	440	*2.0*	3.2	..	4.5	..	..	..
Uzbekistan	3.3	..	..	..	..	2.9	3.2	11.5	8.3	19	14	..
Venezuela	1.0	4.5	7.5	617	213	0.8	1.6	0.3	2.6	..	..	..
Vietnam	1.1	4.1	5.2	63	9	0.2	0.4	3.5	3.8	7	8	3
West Bank and Gaza	4.7	3.7	8.4	..	114	..	..	..	..	9	3	4
Yemen, Rep.	1.3	4.6	5.9	19	39	*0.1*	0.1	..	0.8	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	2.0	..	5.3	8	12	2
Zambia	2.9	0.7	3.3	31	17	0.1	0.1	*3.5*	..	..	..	..
Zimbabwe	1.7	3.1	4.7	133	41	0.2	0.1	3.1	0.5	..	..	..
World	**2.5 w**	**2.7 w**	**5.4 w**	**527 w**	**502 w**	**1.0 w**	**1.4 w**	**3.5 w**	**3.8 w**	**9 w**	**14 w**	**6 w**
Low income	1.0	3.2	4.5	52	15	0.3	..	1.1	..	9	11	3
Middle income	2.4	2.0	4.4	183	89	1.3	1.7	3.9	3.6	7	14	5
Lower middle income	2.2	1.7	3.9	119	38	1.4	1.8	3.9	3.6	7	15	6
Upper middle income	3.0	3.1	6.2	427	283	*1.0*	1.5	..	..	6	7	3
Low & middle income	1.8	2.5	4.4	133	61	0.9	1.2	2.7	2.7	7	14	4
East Asia & Pacific	1.8	1.8	3.6	118	46	0.8	1.4	2.0	2.1	4	15	5
Europe & Central Asia	3.9	1.0	5.5	279	144	3.0	3.6	10.4	10.1	17	14	6
Latin America & Carib.	2.6	3.7	6.3	412	274	*0.8*	1.4	..	..	2	4	2
Middle East & N. Africa	2.3	2.4	4.7	176	89	*0.7*	..	*1.7*	1.8	5	8	4
South Asia	0.8	3.8	5.0	57	16	0.3	0.4	0.7	0.7	..	..	3
Sub-Saharan Africa	1.7	1.5	2.7	82	34	..	..	..	1.2	..	..	4
High income	6.0	3.6	9.6	2,280	2,485	*1.8*	2.5	..	5.8	14	15	8
Europe EMU	6.7	2.1	8.9	1,810	1,969	*2.1*	3.2	..	7.9	18	13	6

a. Data are for the most recent year available. b. Data may not sum to totals because of rounding. c. Less than 0.5.

Health expenditure, services, and use 2.13

About the data

National health accounts track resource inputs to the health sector, including both public and private expenditures. By contrast with industrial countries, few developing countries have health accounts that are methodologically consistent with national accounting approaches. The difficulties in creating national health accounts go beyond data collection. Before beginning to establish a national health accounting system, a country needs to define the boundaries of the health care system and a taxonomy of health care delivery institutions. The accounting system should be comprehensive and standardized, providing not only accurate bookkeeping, but also critical information on the equity and efficiency of health financing to inform health policymaking and health system reform.

The absence of consistent national health accounting systems in most developing countries makes cross-country comparisons of health spending difficult. Records of private out-of-pocket expenditures are often lacking. And compiling estimates of public health expenditures is complicated in countries where state or provincial and local governments are involved in health care financing and delivery because the data on public spending often are not aggregated. The data shown in the table are the product of an effort to collect all available information on health expenditures from national and local government budgets, national accounts, household surveys, insurance publications, international donors, and existing tabulations.

Health service indicators (physicians and hospital beds per 1,000 people) and health utilization indicators (inpatient admission rates, average length of stay, and outpatient visits) come from a variety of sources (see below). Data are lacking for many countries, and for others comparability is limited by differences in definitions. For example, some countries incorrectly include retired physicians (because deletions are made only periodically) or those working outside the health sector in estimates of health personnel. There is no universally accepted definition of hospital beds. Moreover, figures on physicians and hospital beds are indicators of availability, not of quality or use. They do not show how well trained the physicians are or how well equipped the hospitals or medical centers are. And physicians and hospital beds tend to be concentrated in urban areas, so these indicators give only a partial view of health services available to the entire population.

Average length of stay in hospitals is an indicator of the efficiency of resource use. Longer stays may reflect a waste of resources if patients are kept in hospitals beyond the time medically required, inflating demand for hospital beds and increasing hospital costs. Aside from differences in cases and financing methods, cross-country variations in average length of stay may result from differences in the role of hospitals. Many developing countries do not have separate extended care facilities, so hospitals become the source of both long-term and acute care. Other factors may also explain the variations. Data for some countries may not include all public and private hospitals. Admission rates may be overstated in some countries if outpatient surgeries are counted as hospital admissions. And in many countries outpatient visits, especially emergency visits, may result in double counting if a patient receives treatment in more than one department.

Table 2.13a

Public health spending in low-income countries, 1990–97

Country	Per capita US$	As % of level required for minimum health package
Bangladesh	6	50
Cameroon	7	58
Ethiopia	3	25
Haiti	14	117
Lao PDR	10	83
Nigeria	5	42
Uganda	9	75
Yemen, Rep.	39	325

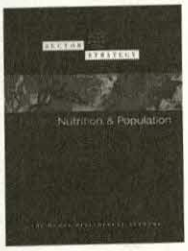
Source: World Bank 1993c.

Low-income countries spend less on health than do middle- and high-income countries, both in absolute terms and as a share of GDP. In many low-income countries the amount spent per capita is much less than the estimated $12 a year needed to secure the minimum preventive and essential clinical services.

Definitions

- **Public health expenditure** consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds. • **Private health expenditure** includes direct household (out-of-pocket) spending, private insurance, charitable donations, and direct service payments by private corporations. • **Total health expenditure** is the sum of public and private health expenditures. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation. • **Physicians** are defined as graduates of any faculty or school of medicine who are working in the country in any medical field (practice, teaching, research). • **Hospital beds** include inpatient beds available in public, private, general, and specialized hospitals and rehabilitation centers. In most cases beds for both acute and chronic care are included. • **Inpatient admission rate** is the percentage of the population admitted to hospitals during a year. • **Average length of stay** is the average duration of inpatient hospital admissions. • **Outpatient visits per capita** are the number of visits to health care facilities per capita, including repeat visits.

Data sources



Health expenditure estimates come from country sources, supplemented by information from international agencies and World Bank country and sector studies, including the Human Development Network's *Sector Strategy: Health, Nutrition, and Population.* Data were also drawn from World Bank public expenditure reviews, the International Monetary Fund's government finance data files, and other studies. Data on private expenditure are largely from household surveys and World Bank poverty assessments and sector studies. The Organisation for Economic Co-operation and Development (OECD) provided data on public and private health expenditures and use of health services for member countries. Data for physicians and hospital beds are from the World Health Organization (WHO), supplemented by country data.

2.14 Access to health services

	Safe water		Sanitation		Tetanus vaccination	Child immunization			
	% of population with access		% of population with access		% of pregnant women	Measles % of children under 12 months		DPT % of children under 12 months	
	1982	1995	1982	1995	1995–97[a]	1980	1997	1980	1997
Albania	*92*	*76*	..	*58*	58	*90*	95	*94*	99
Algeria	77	..	..	..	..	*17*	74	*33*	79
Angola	*28*	32	*18*	15	15	*26*	78	*6*	41
Argentina	*55*	65	*69*	75	75	58	98	41	85
Armenia	..	..	..	..	..	..	92	..	87
Australia	99	*99*	99	..	..	*68*	87	33	86
Austria	*99*	..	..	..	..	*25*	90	*90*	90
Azerbaijan	..	..	..	*36*	36	..	*99*	..	*95*
Bangladesh	*40*	*84*	*4*	*35*	35	*1*	97	*1*	98
Belarus	*100*	..	..	..	..	..	98	..	97
Belgium	*98*	..	..	..	..	*50*	64	*95*	62
Benin	*14*	72	*10*	24	24	..	82	..	78
Bolivia	*53*	70	*36*	41	41	13	98	11	82
Bosnia and Herzegovina	..	..	..	*41*	41	..	85	..	79
Botswana	*77*	*70*	*36*	*55*	55	63	79	*66*	76
Brazil	*75*	69	*24*	67	67	56	99	40	79
Bulgaria	*85*	..	..	..	..	*98*	93	*97*	94
Burkina Faso	35	..	5	..	..	*23*	68	*2*	70
Burundi	*23*	*58*	*52*	*48*	48	*30*	*50*	*38*	*63*
Cambodia	..	*13*	..	..	..	..	68	..	70
Cameroon	*36*	*41*	*36*	*40*	40	*16*	43	*5*	44
Canada	97	99	60	95	95	..	*98*	..	*93*
Central African Republic	16	*23*	*19*	*45*	45	12	*46*	13	*53*
Chad	*31*	*24*	*14*	*21*	21	..	30	*1*	24
Chile	*86*	91	*67*	81	81	87	92	94	91
China	..	*83*	..	..	..	*78*	96	*58*	96
Hong Kong, China	..	..	..	..	..	74	82	73	88
Colombia	*91*	75	*68*	59	59	14	89	15	81
Congo, Dem. Rep.	..	..	..	..	..	18	20	*18*	18
Congo, Rep.	..	..	*40*	*9*	9	*49*	18	*42*	23
Costa Rica	*93*	100	*95*	97	97	60	99	86	91
Côte d'Ivoire	20	*72*	17	*51*	51	..	68	..	70
Croatia	*70*	63	*67*	61	61	..	93	..	92
Cuba	61	91	31	*92*	92	48	99	67	99
Czech Republic	*100*	..	..	..	..	..	96	..	98
Denmark	..	..	..	*100*	100	..	84	*85*	*90*
Dominican Republic	*49*	73	*66*	80	80	29	80	35	80
Ecuador	*58*	55	*57*	53	53	24	75	10	76
Egypt, Arab Rep.	90	*84*	70	*70*	70	78	92	84	94
El Salvador	*51*	53	*62*	77	77	45	97	43	97
Eritrea	..	*7*	..	..	..	..	53	..	60
Estonia	..	..	..	..	..	74	88	84	85
Ethiopia	4	26	..	8	8	4	52	*3*	63
Finland	*95*	*98*	100	100	100	*70*	*98*	*92*	*100*
France	*98*	100	..	..	..	*15*	83	*79*	97
Gabon	*50*	*67*	*50*	*76*	76	..	*57*	*14*	*41*
Gambia, The	42	*50*	*77*	*37*	37	*71*	91	*80*	96
Georgia	..	..	..	..	..	..	95	..	92
Germany	*90*	..	..	..	..	*35*	*75*	..	*45*
Ghana	..	*65*	*26*	*32*	32	16	59	7	60
Greece	*85*	..	..	..	..	..	90	72	85
Guatemala	*58*	67	*54*	67	67	23	74	43	78
Guinea	*20*	*55*	12	*14*	14	..	56	..	53
Guinea-Bissau	24	53	*25*	21	21	..	51	*9*	63
Haiti	*38*	39	*19*	26	26	..	*32*	3	*34*
Honduras	*50*	77	*32*	82	82	35	89	31	94

Access to health services 2.14

	Safe water		Sanitation		Tetanus vaccination	Child immunization			
	% of population with access		% of population with access		% of pregnant women	Measles % of children under 12 months		DPT % of children under 12 months	
	1982	**1995**	**1982**	**1995**	**1995–97[a]**	**1980**	**1997**	**1980**	**1997**
Hungary	*87*	..	..	..	..	99	100	99	100
India	*54*	*85*	*8*	*16*	16	..	81	31	90
Indonesia	*39*	*65*	*30*	*55*	55	*2*	92	*1*	91
Iran, Islamic Rep.	50	90	60	81	81	39	96	32	100
Iraq	74	*77*	*69*	*70*	70	35	98	13	92
Ireland	*97*	..	..	..	..	*10*	..	34	..
Israel	*100*	99	..	100	100	69	94	84	92
Italy	*99*	..	..	..	..	5	75	..	60
Jamaica	*96*	93	*91*	*74*	74	*12*	88	34	90
Japan	*99*	*96*	*99*	*100*	100	69	*94*	60	*100*
Jordan	89	98	76	98	98	29	95	30	93
Kazakhstan	..	..	..	..	..	..	97	..	96
Kenya	*27*	*45*	*44*	*45*	45	..	32	..	36
Korea, Dem. Rep.	*100*	100	*100*	100	100	29	*100*	50	*100*
Korea, Rep.	*83*	83	*100*	100	100	4	85	70	80
Kuwait	100	100	100	100	100	48	95	67	96
Kyrgyz Republic	..	*81*	..	..	..	..	98	..	98
Lao PDR	..	*51*	..	*32*	32	..	67	..	60
Latvia	..	..	..	..	..	..	97	..	75
Lebanon	92	*94*	59	*97*	97	..	89	*4*	92
Lesotho	18	62	12	..	..	*49*	53	*56*	57
Libya	90	*95*	70	86	86	65	92	60	96
Lithuania	..	..	..	..	..	..	96	..	90
Macedonia, FYR	..	..	..	..	..	..	98	..	97
Madagascar	*31*	*16*	..	*34*	34	..	*68*	48	*73*
Malawi	*32*	*60*	*60*	*64*	64	49	87	58	95
Malaysia	*71*	89	75	*94*	94	*11*	83	58	91
Mali	..	*48*	*21*	*37*	37	..	56	..	52
Mauritania	*37*	*64*	..	*32*	32	*45*	20	*18*	28
Mauritius	*99*	*100*	*97*	*100*	100	*34*	*85*	87	*89*
Mexico	*82*	95	*57*	76	76	35	97	41	83
Moldova	..	56	..	50	50	..	99	..	97
Mongolia	*100*	*54*	*50*	..	..	17	98	76	92
Morocco	32	57	50	68	68	*17*	92	*43*	95
Mozambique	9	*24*	10	*23*	23	*32*	70	*56*	61
Myanmar	20	*60*	20	*43*	43	..	88	4	90
Namibia	..	*60*	..	*42*	42	..	57	..	63
Nepal	11	*59*	0	*23*	23	*2*	85	8	78
Netherlands	*100*	*99*	..	*100*	100	91	96	96	95
New Zealand	87	90	*88*	..	..	80	114	76	86
Nicaragua	*50*	62	*27*	59	59	15	94	15	94
Niger	*37*	*48*	*9*	*17*	17	*19*	42	*6*	28
Nigeria	*36*	50	..	57	57	*55*	69	..	45
Norway	*99*	100	..	100	100	*80*	*93*	*90*	*92*
Oman	15	88	*39*	85	85	22	98	18	99
Pakistan	38	*62*	16	*39*	39	1	74	2	74
Panama	*82*	84	*81*	90	90	47	92	47	95
Papua New Guinea	..	*31*	..	*25*	25	*1*	40	32	45
Paraguay	*23*	39	*49*	32	32	19	61	17	82
Peru	*53*	66	*48*	61	61	21	94	14	98
Philippines	*65*	*83*	*57*	*77*	77	*9*	83	47	83
Poland	*82*	..	..	..	..	92	*96*	96	*95*
Portugal	*66*	*82*	..	..	..	54	*99*	73	*95*
Puerto Rico	..	97	..	..	..	..	..	..	..
Romania	77	*62*	..	*44*	44	83	97	..	97
Russian Federation	..	..	..	..	..	..	*95*	..	*87*

2.14 Access to health services

	Safe water		Sanitation		Tetanus vaccination	Child immunization			
	% of population with access		% of population with access		% of pregnant women	Measles % of children under 12 months		DPT % of children under 12 months	
	1982	**1995**	**1982**	**1995**	**1995–97**[a]	**1980**	**1997**	**1980**	**1997**
Rwanda	..	..	..	*94*	94	*42*	66	*17*	77
Saudi Arabia	91	*93*	76	*86*	86	8	92	41	92
Senegal	*44*	*50*	..	..	..	..	65	..	65
Sierra Leone	*24*	*34*	13	..	..	36	28	13	26
Singapore	100	100	*85*	100	100	47	89	84	93
Slovak Republic	..	..	43	*51*	51	..	98	..	98
Slovenia	..	*98*	80	*98*	98	..	82	..	91
South Africa	..	*59*	..	*53*	53	*74*	*76*	*74*	*73*
Spain	*99*	..	..	*97*	97	*8*	*90*	..	*88*
Sri Lanka	*37*	70	*66*	75	75	..	94	46	97
Sudan	*40*	60	*5*	22	22	*1*	92	1	79
Sweden	*100*	..	..	..	..	*56*	*96*	*99*	*99*
Switzerland	*100*	*100*	..	..	..	..	..	..	..
Syrian Arab Republic	71	*88*	45	71	71	13	93	13	95
Tajikistan	..	*69*	..	*62*	62	..	95	..	95
Tanzania	*52*	*49*	..	*86*	86	45	69	59	74
Thailand	*66*	89	*47*	96	96	..	*92*	49	*96*
Togo	*35*	55	*14*	41	41	..	38	..	33
Trinidad and Tobago	*98*	96	*100*	96	96	..	88	24	90
Tunisia	72	*90*	46	*80*	80	65	92	36	96
Turkey	*69*	..	..	..	..	27	76	42	79
Turkmenistan	..	*60*	..	*60*	60	..	100	..	98
Uganda	*16*	*42*	*13*	*67*	67	*22*	60	*9*	58
Ukraine	..	*55*	..	*49*	49	..	*97*	*53*	*96*
United Arab Emirates	100	*98*	75	*95*	95	34	95	11	92
United Kingdom	*100*	*100*	..	*96*	96	*52*	95	*44*	95
United States	*100*	73	98	..	..	86	*89*	96	*94*
Uruguay	*83*	89	*59*	61	61	50	80	53	88
Uzbekistan	..	*57*	..	*18*	18	..	88	..	96
Venezuela	*84*	79	*45*	72	72	50	68	56	60
Vietnam	..	*47*	*30*	*60*	60	*1*	96	*4*	95
West Bank and Gaza	..	..	..	..	..	..	96	..	96
Yemen, Rep.	..	39	..	19	19	2	51	1	57
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	91	..	94
Zambia	*48*	53	*47*	51	51	..	69	*83*	70
Zimbabwe	10	*77*	5	*66*	66	*56*	73	*39*	78
World	.. w	*75* w	.. w	.. w	52 w	.. w	83 w	.. w	83 w
Low income	*47*	*69*	*12*	*29*	..	..	74	25	75
Middle income	..	*79*	..	..	..	..	93	..	91
Lower middle income	..	*78*	..	..	..	..	93	..	93
Upper middle income	*77*	..	..	..	..	50	92	48	82
Low & middle income	..	*75*	..	..	52	..	83	..	83
East Asia & Pacific	..	*77*	..	..	36	..	93	..	93
Europe & Central Asia	..	..	..	..	..	..	*91*	..	*89*
Latin America & Carib.	*73*	75	*46*	68	57	42	93	37	82
Middle East & N. Africa	69	..	62	..	59	44	88	42	*90*
South Asia	*50*	*81*	*9*	*20*	74	..	81	27	*87*
Sub-Saharan Africa	..	*47*	..	*47*	39	..	58	..	53
High income	*97*	..	..	..	..	..	..	..	..
Europe EMU	*95*	..	..	..	..	..	*75*	..	*69*

a. Data are for the most recent year available.

Access to health services 2.14

About the data

The indicators in the table are provided to the World Health Organization (WHO) by member states as part of their efforts to monitor and evaluate progress in implementing national health-for-all strategies. Because reliable, observation-based statistical data for these indicators do not exist in some developing countries, the data are estimated. These estimates may be skewed by a country's desire to show progress or to establish a need for international assistance.

Indicators of access to health services measure the supply of services but reveal little about benefits or rate of use. They provide no information on how the quality or consumption of services differs among groups within countries, regions, or communities, for example. And unless the indicators are based on survey statistics, they may not fully reflect the situation in the country.

People's health is influenced by the environment in which they live. A lack of clean water and basic sanitation is the main reason diseases transmitted by feces are so common in developing countries. Drinking water contaminated by feces deposited near homes and an inadequate supply of water cause diseases that account for 10 percent of the total disease burden in developing countries (World Bank 1993c). To date, however, efforts to improve the provision of water, sanitation, and drainage have been disappointing. At the end of the 1980s—which had been declared the International Drinking Water Supply and Sanitation Decade by a coalition of international aid agencies—most people in poor regions still lacked adequate sanitation.

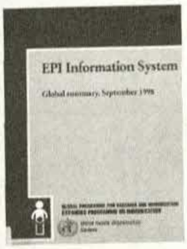
Governments in developing countries usually finance immunization against measles and diphtheria, pertussis (or whooping cough), and tetanus (DPT) as part of the basic public health package, though they often rely on personnel with limited training to provide the vaccines. According to the World Bank's *World Development Report 1993: Investing in Health*, these diseases account for about 10 percent of the disease burden among children under five, compared with an expected 23 percent at 1970 levels of vaccination. In many developing countries, however, data recording practices make immunization difficult to measure (WHO 1996).

Neonatal tetanus is an important cause of infant mortality in some developing countries. It can be prevented through immunization of the mother during pregnancy; the mother transfers immune protection to the baby through the placenta. Recommended doses for full protection are generally two tetanus shots during the first pregnancy and one booster shot during each subsequent pregnancy, with five doses considered adequate for lifetime protection. Information on tetanus shots during pregnancy is collected through surveys in which pregnant respondents are asked to show antenatal cards on which tetanus shots have been recorded. Because not all women have antenatal cards, respondents are also asked about their receipt of these injections. Poor recall may result in a downward bias in estimates of the share of births protected. But in settings where receiving injections is common, respondents may erroneously report having received tetanus toxoid.

Definitions

• **Percentage of population with access to safe water** is the share of the population with reasonable access to an adequate amount of safe water (including treated surface water and untreated but uncontaminated water, such as from springs, sanitary wells, and protected boreholes). In urban areas the source may be a public fountain or standpipe located not more than 200 meters away. In rural areas the definition implies that members of the household do not have to spend a disproportionate part of the day fetching water. An adequate amount of safe water is that needed to satisfy metabolic, hygienic, and domestic requirements—usually about 20 liters a person a day. The definition of safe water has changed over time. • **Percentage of population with access to sanitation** is the share of the population with at least adequate excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Suitable facilities range from simple but protected pit latrines to flush toilets with sewerage. To be effective, all facilities must be correctly constructed and properly maintained. • **Pregnant women receiving tetanus vaccination** are the percentage of pregnant women who receive two tetanus toxoid injections during their first pregnancy and one booster shot during each subsequent pregnancy. • **Child immunization** is the rate of vaccination coverage of children under one year of age for four diseases—measles and diphtheria, pertussis (or whooping cough), and tetanus (DPT). A child is considered adequately immunized against measles after receiving one dose of vaccine, and against DPT after receiving two or three doses of vaccine, depending on the immunization scheme.

Data sources



EPI Information System

Global summary, September 1998

The table was produced using information provided to the WHO by countries as part of their responsibility for monitoring progress toward "health for all" as well as data from the WHO's *EPI Information System: Global Summary, September 1998*, and the United Nations Children's Fund (UNICEF), *The State of the World's Children 1999*.

2.15 Reproductive health

	Total fertility rate		Adolescent fertility rate	Women at risk of unintended pregnancy	Contraceptive prevalence rate	Births attended by skilled health staff		Maternal mortality ratio
	births per woman		births per 1,000 women aged 15–19	% of married women aged 15–49	% of women aged 15–49	% of total		per 100,000 live births
	1980	**1997**	**1997**	**1990–98**[a]	**1990–98**[a]	**1982**	**1996–98**[a]	**1990–97**[a]
Albania	3.6	2.5	30	..	..	..	91	28[b]
Algeria	6.7	3.6	22	..	51	..	77	140[b]
Angola	6.9	6.8	219	..	..	34	17	1,500[c]
Argentina	3.3	2.6	65	..	..	..	97	100[c]
Armenia	2.3	1.5	47	..	..	..	95	21[b]
Australia	1.9	1.8	22	..	..	99	..	9[c]
Austria	1.6	1.4	18	..	..	..	..	10[c]
Azerbaijan	3.2	2.1	23	..	..	..	99	44[b]
Bangladesh	6.1	3.2	144	16	49	2	8	850[c]
Belarus	2.0	1.2	32	..	..	..	..	22[b]
Belgium	1.7	1.6	11	..	..	..	..	10[c]
Benin	7.0	5.8	115	21	16	34	60	500[d]
Bolivia	5.5	4.4	79	24	45	..	46	370[d]
Bosnia and Herzegovina	2.1	1.6	33	..	..	..	..	..
Botswana	6.1	4.3	78	..	..	..	77	250[c]
Brazil	3.9	2.3	73	7	77	98	88	160[d]
Bulgaria	2.0	1.1	45	..	..	..	99	20[b]
Burkina Faso	7.5	6.6	147	33	8	12	41	930[c]
Burundi	6.8	6.3	55	..	..	..	24	1,300[c]
Cambodia	4.7	4.6	14	..	..	..	31	900[c]
Cameroon	6.4	5.3	140	22	16	..	58	550[c]
Canada	1.7	1.6	24	..	..	..	..	6[c]
Central African Republic	5.8	4.9	133	16	14	..	46	700[d]
Chad	6.9	6.5	190	9	4	24	15	840[d]
Chile	2.8	2.4	48	..	..	92	99	65[b]
China	2.5	1.9	15	..	85	..	85	95[e]
Hong Kong, China	2.0	1.3	7	..	..	89	100	7[c]
Colombia	3.9	2.8	88	8	72	..	85	100[c]
Congo, Dem. Rep.	6.6	6.4	217	..	..	..	..	870[c]
Congo, Rep.	6.3	6.1	141	..	..	..	50	890[c]
Costa Rica	3.7	2.8	85	..	..	93	97	55[c]
Côte d'Ivoire	7.4	5.1	133	43	11	..	45	810[d]
Croatia	..	1.6	19	..	..	..	..	12[b]
Cuba	2.0	1.5	65	..	..	..	99	36[b]
Czech Republic	2.1	1.2	23	..	69	..	100	2[b]
Denmark	1.5	1.8	9	..	..	..	..	9[c]
Dominican Republic	4.2	3.0	13	13	64	..	96	110[c]
Ecuador	5.0	3.0	68	..	57	62	64	150[c]
Egypt, Arab Rep.	5.1	3.2	51	16	48	..	46	170[c]
El Salvador	4.9	3.2	95	..	53	..	87	300[c]
Eritrea	..	5.8	121	28	8	..	21	1,000[c]
Estonia	2.0	1.2	37	..	..	..	100	52[b]
Ethiopia	6.6	6.5	157	..	4	..	8	1,400[c]
Finland	1.6	1.9	11	..	..	..	..	11[c]
France	1.9	1.7	9	..	..	..	..	15[c]
Gabon	4.5	5.2	166	..	..	..	80	500[c]
Gambia, The	6.5	5.7	174	..	..	41	44	1,050[c]
Georgia	2.3	1.5	36	..	..	..	95	19[b]
Germany	1.4	1.4	14	..	..	..	..	22[c]
Ghana	6.5	4.9	106	33	20	..	44	740[c]
Greece	2.2	1.3	17	..	..	..	..	10[c]
Guatemala	6.3	4.5	109	24	32	..	35	190[d]
Guinea	6.1	5.5	190	25	2	..	31	880[d]
Guinea-Bissau	5.8	5.8	190	..	..	..	25	910[c]
Haiti	5.9	4.4	70	48	18	34	20	600[d]
Honduras	6.5	4.3	115	..	50	..	55	220[c]

Reproductive health 2.15

	Total fertility rate		Adolescent fertility rate	Women at risk of unintended pregnancy	Contraceptive prevalence rate	Births attended by skilled health staff		Maternal mortality ratio
	births per woman		births per 1,000 women aged 15–19	% of married women aged 15–49	% of women aged 15–49	% of total		per 100,000 live births
	1980	1997	1997	1990–98[a]	1990–98[a]	1982	1996–98[a]	1990–97[a]
Hungary	1.9	1.4	28	..	..	99	96	14[b]
India	5.0	3.3	118	20	41	23	35	440[d]
Indonesia	4.3	2.8	61	11	57	27	36	390[d]
Iran, Islamic Rep.	6.7	2.8	50	..	73	..	74	120[c]
Iraq	6.4	4.7	40	..	..	..	54	310[c]
Ireland	3.2	1.9	15	..	60	..	..	10[c]
Israel	3.2	2.7	19	..	..	..	99	7[c]
Italy	1.6	1.2	8	..	..	..	..	12[c]
Jamaica	3.7	2.7	104	..	65	86	92	120[c]
Japan	1.8	1.4	3	..	..	..	..	18[b]
Jordan	6.8	4.2	42	22	53	..	97	150[c]
Kazakhstan	2.9	2.0	46	11	59	..	99	53[b]
Kenya	7.8	4.7	112	36	38	..	45	650[c]
Korea, Dem. Rep.	2.8	2.0	2	..	..	..	100	70[c]
Korea, Rep.	2.6	1.7	4	..	..	70	95	30[b]
Kuwait	5.3	2.9	34	..	..	98	98	20[b]
Kyrgyz Republic	4.1	2.8	35	12	60	..	98	32[b]
Lao PDR	6.7	5.6	43	..	..	..	30	660[c]
Latvia	2.0	1.1	32	..	..	..	100	15[b]
Lebanon	4.0	2.5	26	..	..	..	89	300[c]
Lesotho	5.5	4.8	86	..	23	..	50	610[c]
Libya	7.3	3.8	56	..	45	68	94	220[c]
Lithuania	2.0	1.4	35	..	..	..	100	13[b]
Macedonia, FYR	2.5	1.9	39	..	..	..	95	22[b]
Madagascar	6.6	5.8	175	26	19	..	57	500[d]
Malawi	7.6	6.4	154	36	22	..	55	620[d]
Malaysia	4.2	3.2	25	..	..	88	98	34[b]
Mali	7.1	6.6	181	26	7	14	24	580[d]
Mauritania	6.3	5.5	135	..	..	..	40	800[c]
Mauritius	2.7	1.9	37	..	75	..	97	110[b]
Mexico	4.7	2.8	70	..	..	..	75	110[c]
Moldova	2.4	1.6	29	..	74	..	..	23[b]
Mongolia	5.3	2.6	47	..	..	..	99	65[c]
Morocco	5.4	3.1	50	16	50	20	40	370[f]
Mozambique	6.5	5.3	162	7	6	29	44	1,100[c]
Myanmar	4.9	2.4	19	..	..	..	57	580[c]
Namibia	5.9	4.9	105	22	29	..	68	220[d]
Nepal	6.1	4.4	120	28	..	..	9	1,500[c]
Netherlands	1.6	1.5	4	..	..	100	..	12[c]
New Zealand	2.0	1.9	52	..	..	..	..	25[c]
Nicaragua	6.3	3.9	135	..	44	..	61	160[c]
Niger	7.4	7.4	215	19	8	26	15	590[d]
Nigeria	6.9	5.3	116	22	6	..	31	1,000[c]
Norway	1.7	1.9	16	..	..	100	..	6[c]
Oman	9.9	4.8	65	..	..	..	91	..
Pakistan	7.0	5.0	104	32	24	..	18	340[c]
Panama	3.7	2.6	82	..	..	80	84	55[c]
Papua New Guinea	5.8	4.3	68	29	26	..	53	370[c]
Paraguay	5.2	3.8	92	15	51	..	61	190[d]
Peru	4.5	3.2	68	12	64	30	56	280[c]
Philippines	4.8	3.6	43	26	48	..	53	210[d]
Poland	2.3	1.5	23	..	..	..	98	5[b]
Portugal	2.2	1.4	21	..	..	..	..	15[c]
Puerto Rico	2.6	1.9	69	..	78	..	99	21[b]
Romania	2.4	1.3	41	..	57	..	99	41[b]
Russian Federation	1.9	1.3	46	..	34	..	..	53[b]

2.15 Reproductive health

	Total fertility rate births per woman		Adolescent fertility rate births per 1,000 women aged 15–19	Women at risk of unintended pregnancy % of married women aged 15–49	Contraceptive prevalence rate % of women aged 15–49	Births attended by skilled health staff % of total		Maternal mortality ratio per 100,000 live births
	1980	1997	1997	1990–98[a]	1990–98[a]	1982	1996–98[a]	1990–97[a]
Rwanda	8.3	6.2	56	37	21	20	26	1,300[c]
Saudi Arabia	7.3	5.9	114	..	..	..	90	18[b]
Senegal	6.8	5.6	119	33	13	..	47	510[d]
Sierra Leone	6.5	6.1	202	..	..	..	25	..
Singapore	1.7	1.7	10	..	..	100	100	10[c]
Slovak Republic	2.3	1.4	33	..	..	..	100	8[b]
Slovenia	2.1	1.3	16	..	..	..	100	5[b]
South Africa	4.6	2.8	43	..	69	..	82	230[c]
Spain	2.2	1.1	8	..	..	..	..	7[c]
Sri Lanka	3.5	2.2	21	..	..	85	94	30[b]
Sudan	6.5	4.6	54	25	10	23	86	370[b]
Sweden	1.7	1.7	10	..	..	..	..	7[c]
Switzerland	1.5	1.5	5	..	..	..	..	6[c]
Syrian Arab Republic	7.4	4.0	44	..	40	43	77	180[b]
Tajikistan	5.6	3.5	29	..	..	..	92	58[b]
Tanzania	6.7	5.5	126	24	18	..	38	530[d]
Thailand	3.5	1.7	70	..	..	40	71	200[c]
Togo	6.6	6.1	117	..	..	..	32	640[c]
Trinidad and Tobago	3.3	1.9	46	..	..	..	98	90[c]
Tunisia	5.2	2.8	14	..	60	50	..	170[c]
Turkey	4.3	2.5	44	11	..	70	76	180[c]
Turkmenistan	4.9	3.0	17	..	..	..	90	44[b]
Uganda	7.2	6.6	196	29	15	..	38	550[f]
Ukraine	2.0	1.3	34	..	..	..	..	30[b]
United Arab Emirates	5.4	3.5	56	..	..	94	99	26[c]
United Kingdom	1.9	1.7	28	..	..	..	..	9[b]
United States	1.8	2.0	60	..	76	100	..	12[c]
Uruguay	2.7	2.4	70	..	..	..	96	85[c]
Uzbekistan	4.8	3.3	36	..	..	..	98	24[b]
Venezuela	4.2	3.0	98	..	..	82	97	120[b]
Vietnam	5.0	2.4	28	..	75	100	79	105[b]
West Bank and Gaza	..	6.0	100	..	..	..	..	..
Yemen, Rep.	7.9	6.4	105	..	21	..	43	1,400[c]
Yugoslavia, FR (Serb./Mont.)	2.3	1.9	35	..	..	..	93	12[b]
Zambia	7.0	5.6	143	27	26	..	47	650[d]
Zimbabwe	6.4	3.8	89	15	48	49	69	280[d]
World	3.7 w	2.8 w	70 w					
Low income	5.6	4.0	118					
Middle income	3.2	2.3	41					
Lower middle income	3.1	2.2	35					
Upper middle income	3.8	2.5	61					
Low & middle income	4.1	3.0	75					
East Asia & Pacific	3.1	2.1	27					
Europe & Central Asia	2.5	1.7	38					
Latin America & Carib.	4.1	2.7	75					
Middle East & N. Africa	6.2	3.6	52					
South Asia	5.3	3.5	119					
Sub-Saharan Africa	6.6	5.5	134					
High income	1.9	1.7	26					
Europe EMU	1.8	1.4	11					

a. Data are for most recent year available. b. Official estimate. c. UNICEF-WHO estimate based on statistical modeling. d. Indirect estimate based on a sample survey. e. Based on a survey covering 30 provinces. f. Based on a sample survey.

Reproductive health 2.15

About the data

Reproductive health services include antenatal care, safe childbearing, provision of safe and effective contraception, and treatment and prevention of sexually transmitted diseases. These services will need to expand rapidly over the next two decades, when the number of women and men of reproductive age is expected to nearly double (Conly and Epp 1997).

Total and adolescent fertility rates are based on data on registered live births from vital registration systems or, in the absence of such systems, from censuses or sample surveys. As long as the surveys are fairly recent, the estimated rates are generally considered reliable measures of fertility in the recent past. In cases where no empirical information on age-specific fertility rates is available, a model is used to estimate the share of births to adolescents. For countries without vital registration systems fertility rates for 1997 are generally based on extrapolations from trends observed in censuses or surveys from earlier years.

An increasing number of couples in the developing world want to limit or postpone childbearing but are not using effective contraceptive methods. These couples face the risk of unintended pregnancy, shown in the table as the percentage of married women of reproductive age who do not want to become pregnant but are not using contraception (Bulatao 1998). Information on this indicator is collected through surveys and excludes women not exposed to the risk of pregnancy because of postpartum anovulation, menopause, or infertility. Common reasons for not using contraception are lack of knowledge about contraceptive methods and concerns about their possible health side-effects.

Contraceptive prevalence reflects all methods—ineffective traditional methods as well as highly effective modern methods. Contraceptive prevalence rates are obtained mainly from demographic and health surveys and contraceptive prevalence surveys (see *Primary data documentation* for the most recent survey year). Unmarried women are often excluded from such surveys, which may bias the estimates.

The share of births attended by health staff is an indicator of a health system's ability to provide adequate care for pregnant women. Good antenatal and postnatal care improves maternal health and reduces maternal and infant mortality. But data may not reflect such improvements because health information systems are often weak, maternal deaths are underreported, and rates of maternal mortality are difficult to measure. The data in the table are from the World Health Organization (WHO). They are based on national sources, derived from official community and hospital records. Some reflect only births in hospitals and other medical institutions. In some cases smaller private and rural hospitals are excluded, and sometimes even primitive local facilities are included. Thus the coverage is not always comprehensive, and cross-country comparisons should be made with extreme caution.

Measurement of maternal mortality is subject to many types of errors. Even in industrial countries with vital registration systems, misclassification of maternal deaths has been found to lead to serious underestimation. In developing countries, few of which have vital registration systems, data on maternal mortality are sometimes from hospitals or other health services records, and it is unknown how representative they are. In rural areas few pregnant women have access to health services, while in other settings hospitals receive a high proportion of women in need of emergency obstetric care. Household surveys such as the Demographic and Health Surveys attempt to measure maternal mortality by asking respondents about survivorship of sisters. This sisterhood method is essentially a variant of a demographic approach to estimating adult mortality. Its main disadvantage is that the estimates of maternal mortality that it produces pertain to the 12 years or so before the survey, making the method unsuitable for monitoring recent changes or observing the impact of interventions. An alternative approach collects more detailed birth and survivorship histories for siblings, as well as the age at death for any who have died. This approach requires very large sample sizes and relies on the accuracy of the reported dates of births and deaths.

The maternal mortality ratios in the table are official estimates from administrative records, survey-based estimates using the sisterhood method, or derived from a demographic model developed by the United Nations Children's Fund (UNICEF) and the WHO. The maternal mortality ratio should not be confused with a true rate: the ratio includes maternal deaths (mainly from abortion) in the numerator for which no births are included in the denominator.

Definitions

• **Total fertility rate** is the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates. • **Adolescent fertility rate** is the number of births per 1,000 women aged 15–19. • **Women at risk of unintended pregnancy** are the percentage of fertile, married women of reproductive age who do not want to become pregnant and are not using contraception. • **Contraceptive prevalence rate** is the percentage of women who are practicing, or whose sexual partners are practicing, any form of contraception. It is usually measured for married women aged 15–49 only. • **Births attended by skilled health staff** are the percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period, to conduct deliveries on their own, and to care for newborns. • **Maternal mortality ratio** is the number of women who die during pregnancy and childbirth, per 100,000 live births.

Data sources

Data on reproductive health come from demographic and health surveys, the WHO's *Coverage of Maternity Care* (1997a), and the WHO and UNICEF's *Revised 1990 Estimates of Maternal Mortality: A New Approach* (1996).

2.16 Health: risk factors and future challenges

	Prevalence of anemia	Low-birthweight babies		Prevalence of child malnutrition		Smoking prevalence		Tuberculosis		Consumption of iodized salt
	% of pregnant women 1985–95[a]	% of births 1982	% of births 1993–96[a]	Weight for age % of children under 5 1992–97[a]	Height for age % of children under 5 1992–97[a]	Male % of adults 1985–95[a]	Female % of adults 1985–95[a]	Incidence per 100,000 people 1997	Prevalence thousands of cases 1997	% of households 1992–98[a]
Albania	..	*6*	7	..	18	50	8	28	2	..
Algeria	42	*12*	9	13	18	53	10	44	14	92
Angola	29	..	..	35	..	..	..	238	56	10
Argentina	26	..	7	2	5	40	23	56	30	90
Armenia	..	..	..	..	..	..	..	44	2	..
Australia	..	..	6	0	0	29	21	8	2	..
Austria	..	*6*	6	..	..	42	27	19	2	..
Azerbaijan	..	..	6	10	22	..	..	58	7	..
Bangladesh	53	..	50	56	55	60	15	246	620	78
Belarus	..	6	5	..	..	..	..	65	10	37
Belgium	..	6	6	..	..	31	19	16	2	..
Benin	41	..	..	29	25	..	..	220	21	79
Bolivia	51	10	10	8	29	50	21	253	27	92
Bosnia and Herzegovina	..	..	..	..	..	..	..	81	5	..
Botswana	..	..	8	27	..	..	..	503	9	27
Brazil	33	..	..	6	11	40	25	78	194	95
Bulgaria	..	..	7	..	..	49	17	43	6	..
Burkina Faso	24	21	21	33	29	..	..	155	19	23
Burundi	68	..	16	38	..	..	..	252	16	80
Cambodia	..	..	18	38	..	70	10	539	101	7
Cameroon	44	..	13	..	..	..	..	133	35	86
Canada	..	6	..	..	..	31	29	7	2	..
Central African Republic	67	23	..	23	28	..	..	237	9	65
Chad	37	11	..	39	40	..	..	205	22	55
Chile	13	7	7	1	2	38	25	29	5	
China	52	..	6	16	31	61	7	113	2,721	83
Hong Kong, China	..	..	5	..	..	29	3	95	6	..
Colombia	24	3	9	8	15	35	19	55	31	92
Congo, Dem. Rep.	76	13	..	34	45	40	25	263	188	90
Congo, Rep.	..	15	16	24	45	..	..	277	11	..
Costa Rica	28	..	7	5	6	35	20	18	1	89
Côte d'Ivoire	..	14	14	24	24	..	..	290	48	..
Croatia	..	..	8	1	1	..	..	64	5	70
Cuba	47	*10*	8	8	..	49	25	18	2	45
Czech Republic	23	..	6	1	..	43	31	20	2	..
Denmark	..	*6*	5	..	..	37	37	11	1	..
Dominican Republic	..	*10*	..	6	11	66	14	114	14	13
Ecuador	17	..	13	17	..	..	..	165	32	97
Egypt, Arab Rep.	24	7	12	15	26	40	1	36	35	0
El Salvador	14	9	9	11	23	38	12	74	7	91
Eritrea	..	..	..	44	38	..	..	227	15	80
Estonia	..	..	..	..	..	52	24	52	1	..
Ethiopia	42	..	16	48	64	..	..	251	213	0
Finland	..	4	5	..	..	27	19	13	1	..
France	..	5	6	..	..	40	27	19	11	..
Gabon	..	..	10	..	..	..	..	174	4	..
Gambia, The	80	35	..	26	30	..	..	211	4	0
Georgia	..	..	..	..	..	..	..	67	5	..
Germany	..	..	..	..	..	37	22	15	12	..
Ghana	..	..	17	27	26	..	..	214	67	10
Greece	..	6	9	..	..	46	82	29	3	..
Guatemala	39	10	14	27	50	38	18	85	13	64
Guinea	..	18	13	24	..	..	..	171	22	..
Guinea-Bissau	74	13	20	23	..	..	..	181	4	37
Haiti	38	..	15	28	32	..	..	385	36	10
Honduras	14	9	9	18	40	36	11	96	9	85

Health: risk factors and future challenges 2.16

	Prevalence of anemia	Low-birthweight babies		Prevalence of child malnutrition		Smoking prevalence		Tuberculosis		Consumption of iodized salt
	% of pregnant women 1985–95[a]	% of births 1982	% of births 1993–96[a]	Weight for age % of children under 5 1992–97[a]	Height for age % of children under 5 1992–97[a]	Male % of adults 1985–95[a]	Female % of adults 1985–95[a]	Incidence per 100,000 people 1997	Prevalence thousands of cases 1997	% of households 1992–98[a]
Hungary	..	9	9	..	..	40	27	47	7	..
India	88	..	33	53	52	40	3	187	4,854	70
Indonesia	64	14	11	34	42	53	4	285	1,606	62
Iran, Islamic Rep.	..	4	10	16	19	..	..	55	62	94
Iraq	18	6	24	12	..	40	5	160	56	10
Ireland	..	..	4	..	..	29	28	21	1	..
Israel	..	7	8	..	..	45	30	7	0	..
Italy	..	7	7	..	..	38	26	10	5	..
Jamaica	40	10	10	10	10	43	13	8	0	100
Japan	..	5	6	..	..	59	15	29	48	..
Jordan	..	..	2	10	..	..	..	11	1	75
Kazakhstan	11	..	9	8	16	..	..	104	27	53
Kenya	35	18	16	23	34	..	..	297	106	100
Korea, Dem. Rep.	..	..	..	..	..	..	..	178	91	5
Korea, Rep.	..	9	4	..	..	68	7	142	90	..
Kuwait	40	7	6	11	11	52	12	81	3	..
Kyrgyz Republic	..	..	6	11	25	..	..	99	7	..
Lao PDR	..	..	18	40	47	62	8	167	17	93
Latvia	..	..	4	..	..	67	12	82	2	..
Lebanon	..	..	19	3	12	..	..	26	1	92
Lesotho	7	8	..	16	44	38	1	407	13	73
Libya	..	5	5	5	15	..	..	19	2	90
Lithuania	..	4	4	..	..	52	10	80	5	..
Macedonia, FYR	..	..	8	..	..	..	..	47	2	100
Madagascar	..	..	15	34	50	..	..	205	58	73
Malawi	55	22	..	30	48	..	..	404	33	58
Malaysia	56	10	8	20	..	41	4	112	30	..
Mali	58	13	17	40	30	..	..	292	58	9
Mauritania	..	..	9	23	44	..	..	226	13	3
Mauritius	29	..	..	15	10	47	4	66	1	0
Mexico	14	..	8	14	..	38	14	41	60	99
Moldova	50	..	..	..	..	..	..	73	5	..
Mongolia	45	..	10	12	26	40	7	205	9	62
Morocco	45	9	4	10	24	40	9	122	28	..
Mozambique	58	16	20	26	36	..	..	255	66	62
Myanmar	58	..	16	43	45	58	2	171	163	14
Namibia	16	..	..	26	29	..	..	527	12	59
Nepal	65	..	23	47	48	69	13	211	99	93
Netherlands	..	4	4	..	..	36	29	10	1	..
New Zealand	..	5	6	..	..	24	22	5	0	..
Nicaragua	36	..	15	12	24	..	..	95	5	98
Niger	41	..	15	43	40	..	..	148	32	7
Nigeria	55	18	16	39	38	24	7	214	442	98
Norway	..	4	5	..	..	36	36	6	0	..
Oman	54	..	8	14	16	..	..	13	0	65
Pakistan	37	..	25	38	..	27	4	181	583	19
Panama	..	8	8	6	10	..	..	57	2	92
Papua New Guinea	13	..	23	30	..	46	28	250	30	..
Paraguay	29	7	9	..	..	24	6	73	5	79
Peru	53	9	11	8	26	41	13	265	70	93
Philippines	48	..	11	30	33	43	8	310	481	15
Poland	16	8	9	..	..	51	29	44	26	..
Portugal	..	8	5	..	..	38	15	55	4	..
Puerto Rico	..	9	..	..	..	..	..	10	0	..
Romania	31	..	..	6	..	68	32	121	42	..
Russian Federation	30	..	..	3	13	67	30	106	241	30

2.16 Health: risk factors and future challenges

	Prevalence of anemia	Low-birthweight babies		Prevalence of child malnutrition		Smoking prevalence		Tuberculosis		Consumption of iodized salt
	% of pregnant women 1985–95[a]	% of births 1982	% of births 1993–96[a]	Weight for age % of children under 5 1992–97[a]	Height for age % of children under 5 1992–97[a]	Male % of adults 1985–95[a]	Female % of adults 1985–95[a]	Incidence per 100,000 people 1997	Prevalence thousands of cases 1997	% of households 1992–98[a]
Rwanda	..	..	17	29	49	..	..	276	17	95
Saudi Arabia	..	..	..	..	..	53	..	46	14	..
Senegal	26	..	..	22	23	..	..	223	33	9
Sierra Leone	..	..	..	..	..	..	..	315	23	75
Singapore	..	8	..	14	..	32	3	48	2	..
Slovak Republic	..	..	6	..	..	43	26	35	2	..
Slovenia	..	8	6	..	..	35	23	30	1	..
South Africa	37	..	..	9	23	52	17	394	266	40
Spain	..	1	1	..	..	48	25	61	23	..
Sri Lanka	39	25	18	38	24	55	1	48	14	47
Sudan	36	17	15	34	34	..	..	180	112	0
Sweden	..	*4*	5	..	..	22	24	5	0	..
Switzerland	..	..	5	..	..	36	26	11	1	..
Syrian Arab Republic	..	10	7	13	21	..	..	75	17	40
Tajikistan	50	..	..	..	..	..	..	87	9	20
Tanzania	..	..	14	31	43	..	..	307	124	74
Thailand	57	12	7	..	..	49	4	142	180	50
Togo	48	..	20	19	34	65	14	353	19	1
Trinidad and Tobago	53	..	10	..	..	..	..	11	0	..
Tunisia	..	7	16	9	23	..	..	40	6	98
Turkey	..	8	8	10	21	63	24	41	42	18
Turkmenistan	..	..	..	..	..	27	1	74	5	0
Uganda	30	..	..	26	38	..	..	312	94	69
Ukraine	..	6	8	..	..	57	22	61	49	..
United Arab Emirates	46	8	8	7	..	..	..	21	1	..
United Kingdom	..	..	6	..	..	28	26	18	11	..
United States	..	*7*	8	1	2	28	23	7	15	..
Uruguay	20	*8*	8	4	10	41	27	31	1	..
Uzbekistan	..	..	..	19	31	40	1	81	29	0
Venezuela	29	*9*	9	5	15	29	12	42	11	65
Vietnam	52	*25*	17	45	47	73	4	189	221	65
West Bank and Gaza	..	..	..	..	..	..	..	26	1	..
Yemen, Rep.	..	..	19	29	42	..	..	111	31	21
Yugoslavia, FR (Serb./Mont.)	..	..	..	2	7	52	31	51	8	70
Zambia	34	..	13	24	42	39	7	576	61	90
Zimbabwe	..	15	14	16	21	36	15	543	74	80
World						48 w	12 w	136 w	16,146 t	.. w
Low income						42	5	211		..
Middle income						55	12	119		..
Lower middle income						57	10	129		..
Upper middle income						44	21	81		..
Low & middle income						50	10	157		..
East Asia & Pacific						59	6	151		72
Europe & Central Asia						59	26	75		25
Latin America & Carib.						39	20	81		89
Middle East & N. Africa						..	..	66		48
South Asia						41	4	193		65
Sub-Saharan Africa						..	..	267		61
High income						39	22	24		..
Europe EMU						39	24	22		..

a. Data are for the most recent year available.

Health: risk factors and future challenges 2.16

About the data

The limited availability of data on health status is a major constraint to assessing the health situation in developing countries. Surveillance data are lacking for a number of major public health concerns. Estimates of prevalence and incidence are available for some diseases but are often unreliable and variable. National health authorities differ widely in their capacity and willingness to collect or report information. Even when intentions are good, reporting is based on definitions that may vary widely across countries or over time. To compensate for the paucity of data and ensure reasonable reliability and international comparability, the World Health Organization (WHO) prepares estimates in accordance with epidemiological and statistical standards.

Adequate quantities of micronutrients (vitamins and minerals) are essential for healthy growth and development. Studies indicate that more people are deficient in iron (anemic) than any other micronutrient, and most of those suffering are women of reproductive age. Anemia during pregnancy can harm both the mother and the fetus, causing loss of the baby, premature birth, or low birthweight. Estimates of the prevalence of anemia among pregnant women are generally drawn from clinical data, which suffer from two weaknesses: the sample is not random because it is based on those who seek care, and private clinics or hospitals may not be part of the reporting network.

Low birthweight, which is associated with maternal malnutrition, raises the risk of infant mortality and stunts growth in infancy and childhood, increasing the incidence of other forms of retarded development. Estimates of low-birthweight infants are drawn mostly from hospital records. But many births in developing countries take place at home, and these births are seldom recorded. A hospital birth may indicate higher income and therefore better nutrition, or it could indicate a higher-risk birth, possibly skewing the data on birthweights downward. Changes in this indicator are more likely to reflect changes in reporting practices than actual changes in the rate of low birthweight. The data should be treated with caution, and no comparisons within or across countries should be attempted.

Estimates of child malnutrition, based on both weight for age (underweight) and height for age (stunting), are from national survey data. The proportion of children underweight is the most common indicator of malnutrition. Being underweight, even mildly, increases the risk of death and inhibits cognitive development in children. Moreover, it perpetuates the problem from one generation to the next, through malnourished women having low-birthweight babies. Height for age reflects linear growth achieved pre- and postnatally, and a deficit indicates long-term, cumulative effects of inadequacies of health, diet, or care. It is often argued that stunting is a population proxy for multifaceted deprivation.

By the mid-1990s there were an estimated 1.1 billion smokers worldwide, or one in three of the global adult population. While the prevalence of smoking has been declining in high-income countries in the past three decades, it has been increasing in many low- and middle-income countries, and more than 80 percent of smokers live in developing countries. In 1990 tobacco was estimated to cause about 3 million deaths worldwide. Tobacco causes heart disease and other vascular diseases, and cancers of the lung and other organs. But the delay between starting to smoke and developing a fatal disease may be as much as 30 years. Thus the health impact in developing countries, where the smoking epidemic is still at an early stage, is not yet fully visible but is expected to increase rapidly in the future. Data on smoking are obtained through surveys. Because they give a one-time estimate of the prevalence of smoking with no information on intensity or duration, they should be interpreted with caution.

Tuberculosis (TB) is the major cause of death from a single infectious agent among adults in developing countries (WHO 1998). In industrial countries TB has reemerged largely as a result of cases among immigrants. From an economic point of view this epidemic is about wasted lives and lost productivity. From a health perspective it is about the need to efficiently organize and finance the health sector to serve the needs of the population. And from a social perspective it is about the need to provide equitable access to appropriate health services because TB is most likely to be contracted by the poor. The estimates on TB incidence presented in the table are based on a new approach in which reported cases are adjusted using the ratio of case notifications to the estimated share of cases detected by panels of 80 epidemiologists convened by the WHO.

Iodine deficiency (IDD) is the single most important cause of preventable mental retardation, and it contributes significantly to the risk of stillbirth and miscarriage. One indicator of iodine deficiency is goiter. Severe cases of IDD include cretinism and dwarfism; less severe cases in both adults and children may lead to a decline of 10–15 intelligence quotient (IQ) points. Iodized salt is the best source of iodine, and a global campaign to iodize edible salt is significantly reducing the risks (UNICEF, *The State of the World's Children 1999*).

Definitions

• **Prevalence of anemia**, or iron deficiency, is defined as hemoglobin levels less than 11 grams per deciliter among pregnant women. • **Low-birthweight babies** are newborns weighing less than 2,500 grams, with the measurement taken within the first hours of life, before significant postnatal weight loss has occurred. • **Prevalence of child malnutrition** is the percentage of children under five whose weight for age and height for age are less than minus two standard deviations from the median for the international reference population aged 0–59 months. For children up to two years of age, height is measured by recumbent length. For older children, height is measured by stature while standing. The reference population, adopted by the WHO in 1983, is based on children from the United States, who are assumed to be well nourished. • **Smoking prevalence** is the percentage of men and women over 15 who smoke cigarettes. • **Incidence of tuberculosis** is the estimated number of new tuberculosis cases (pulmonary, smear positive, extrapulmonary). • **Prevalence of tuberculosis** is the number of people suffering from tuberculosis in 1997. • **Consumption of iodized salt** refers to the percentage of households that use edible salt fortified with iodine.

Data sources

The data presented here are drawn from a variety of sources, including the United Nations' *Update on the Nutrition Situation;* the WHO's *World Health Statistics Annual, Global Tuberculosis Control Report 1997*, and *Tobacco or Health: A Global Status Report, 1997;* UNICEF's *The State of the World's Children 1999;* and the WHO and UNICEF's *Low Birth Weight: A Tabulation of Available Information* (1992).

2.17 Confronting AIDS

	Adult HIV prevalence	People currently infected	Adult HIV-1 prevalence in selected populations				Stage of HIV/AIDS epidemic[a]	Socially marketed condom sales	Reported condom use with nonregular partner		
	% of population aged 15–49 1997	1997	Survey year	High-risk group % infected[b]	Survey year	Women attending urban antenatal clinics % infected[c]	1997	millions 1997	Survey year	Male %	Female %
Albania	0.01	<100	..	..	..	..	UK	0.6	..	..	..
Algeria	0.07	..	..	..	..	..	UK	..	..	..	..
Angola	2.12	110,000	1992	2.5[d,e]	1995	0.9[f]	C[g]	..	..	..	..
Argentina	0.69	120,000	1994–95	67.0[h,i]	1997	0.8[j]	C	..	..	..	..
Armenia	0.01	<100	..	..	..	..	UK	..	..	..	..
Australia	0.14	11,000	1992	2.0[i]	..	..	N	..	..	..	..
Austria	0.18	7,500	1990	13.5[k,l]	..	..	C	..	1992	38[m]	..
Azerbaijan	<0.005	<100	1995	0.0[e]	..	..	N	..	..	..	..
Bangladesh	0.03	21,000	1996	0.5[e]	..	..	N	140	..	..	..
Belarus	0.17	9,000	..	..	..	..	UK	..	..	..	..
Belgium	0.14	7,500	..	..	..	..	UK	..	..	..	..
Benin	2.06	54,000	1995–96	43.0[n]	1997	3.7	C	3	..	..	..
Bolivia	0.07	2,600	..	..	..	..	UK	5	1994	65	33
Bosnia and Herzegovina	0.04	..	..	..	..	..	UK	..	..	..	..
Botswana	25.10	190,000	1997	43.9[e,f,o]	1997	34.0[f]	G	2	..	..	..
Brazil	0.63	580,000	1997	30.0[f,n]	1995	2.5[f]	C	35	1996	15	4
Bulgaria	0.01	..	1993	0.0[e]	1993	0.0	N	..	..	..	..
Burkina Faso	7.17	370,000	1994	58.2[f,n]	1997	9.7	G	10	1993	58	38
Burundi	8.30	260,000	..	..	1997	17.0[h]	G	1	..	..	..
Cambodia	2.40	130,000	1997	43.4[f,n]	1997	2.9[f]	C	10	..	..	..
Cameroon	4.89	320,000	1995	18.0[n]	1996	6.9[f]	G	12	..	..	..
Canada	0.33	44,000	..	..	..	..	UK	..	..	..	..
Central African Republic	10.77	180,000	1996	30.1[e,f]	1996	13.8[f]	G	2	1994–95	37	25
Chad	2.72	87,000	1995	13.4[n]	1995	2.4	C	3	..	..	..
Chile	0.20	16,000	1994	0.7[e,f]	1994	0.1[f]	N	..	1997	33	18
China	0.06	400,000	1997	77.2[i,p]	1997	0.0	C	17	..	..	..
Hong Kong, China	0.08	3,100	..	..	..	..	UK	..	..	..	..
Colombia	0.36	72,000	1994	26.2[f,i]	1994	0.5[f]	C	7	..	..	..
Congo, Dem. Rep.	4.35	950,000	1997	29.0[h,n,q]	1997	4.7[f,q]	C	2	..	..	..
Congo, Rep.	7.78	100,000	1997	12.0[d,e]	1997	5.8	G	0.2	..	..	..
Costa Rica	0.55	10,000	1995	15.8[i]	1992	0.0	C	3	1995	55	42
Côte d'Ivoire	10.06	700,000	1997	63.0[h,n]	1997	9.0[f,h,q]	G	16	1994	43	17
Croatia	0.01	..	..	..	..	..	UK	..	..	..	..
Cuba	0.02	1,400	1993	0.0[e]	1996	0.0[r]	N	..	..	..	..
Czech Republic	0.04	2,000	1992	10.3[i,s]	1995	0.0[s]	C	..	1994	41	35
Denmark	0.12	3,100	..	..	..	..	UK	..	..	..	..
Dominican Republic	1.89	83,000	1994	11.7[i,p]	1995	2.4[f]	C	..	1997	48[m]	..
Ecuador	0.28	18,000	1993	3.6[e]	1992	0.3	N	..	..	..	..
Egypt, Arab Rep.	0.03	..	1994	7.6[i,p]	1994	0.0	C	..	..	..	..
El Salvador	0.58	18,000	1995–96	6.0[e]	1994–95	0.0[r]	C	2	..	..	..
Eritrea	3.17	..	1994	25.0[h,n]	1994	3.0[h,r]	C	..	..	..	..
Estonia	0.01	<100	1995	0.0[e,s]	..	..	N	..	..	..	..
Ethiopia	9.31	2,600,000	1992	37.5[e,f,h]	1997	16.4[f,h]	G	28	1994	48	47
Finland	0.02	500	1996	0.1[k,l]	1994	0.0[k]	N	..	..	..	..
France	0.37	110,000	1993	30.4[h,i,t]	1994	0.4[k]	C	..	1993	65	50
Gabon	4.25	23,000	1996–97	16.7[e,p]	1996–97	4.7	C	..	..	..	..
Gambia, The	2.24	13,000	1993	34.7[n,q]	1997	2.0[f]	C	..	..	..	..
Georgia	<0.005	<100	..	..	..	..	UK	..	..	..	..
Germany	0.08	35,000	..	..	1995	0.0[k]	UK	..	..	..	..
Ghana	2.38	210,000	1997	75.8[n,q]	1996	1.7[f]	C	5	..	..	..
Greece	0.14	7,500	1995	0.4[k,l]	..	..	N	..	..	..	..
Guatemala	0.52	27,000	1990–93	5.3[e,f]	..	..	C	1	..	..	..
Guinea	2.09	74,000	1994	36.6[n]	1996	1.5[f,h,q]	C	3	1992	28	15
Guinea-Bissau	2.25	12,000	1987	36.7[n,p,q]	1997	2.0	C	0.7	..	..	..
Haiti	5.17	190,000	1992	21.4[e]	1996	6.0[f]	G	8	1994–95	51	..
Honduras	1.46	43,000	1989–92	30.0[f,h,i]	1996	1.0[h]	C	1	..	..	..

Confronting AIDS 2.17

	Adult HIV prevalence	People currently infected	Adult HIV-1 prevalence in selected populations				Stage of HIV/AIDS epidemic[a]	Socially marketed condom sales	Reported condom use with nonregular partner		
	% of population aged 15–49 **1997**	**1997**	Survey year	High-risk group % infected[b]	Survey year	Women attending urban antenatal clinics % infected[c]	**1997**	millions **1997**	Survey year	Male %	Female %
Hungary	0.04	2,000	..	..	..	..	UK	..	..	..	..
India	0.82	4,100,000	1996	64.5[f,l]	1998	0.7[f,u]	C	300	..	..	..
Indonesia	0.05	52,000	1997	0.2[v]	1995–96	0.0	N	14	..	..	..
Iran, Islamic Rep.	<0.005	..	1995	0.0[e]	1995	0.0[p,r]	N	..	..	..	..
Iraq	<0.005	..	..	..	..	..	UK	..	..	..	..
Ireland	0.09	1,700	..	..	..	..	UK	..	..	..	..
Israel	0.07	..	..	..	..	..	UK	..	..	..	..
Italy	0.31	90,000	1993	23.0[k,l]	1992	0.2[k]	C	..	..	..	..
Jamaica	0.99	14,000	1996	9.2[n,p]	1996	2.0	C	..	..	..	..
Japan	0.01	6,800	1996	0.0[l]	1997	0.0[r]	N	..	..	..	..
Jordan	0.02	..	1994	0.0[e]	1994	0.0	N	..	..	..	..
Kazakhstan	0.03	2,500	..	..	..	..	UK	..	..	..	..
Kenya	11.64	1,600,000	1993–95	55.2[n]	1996–97	14.4	G	8	1993	35	13
Korea, Dem. Rep.	<0.005	..	..	..	..	..	UK	2	..	..	..
Korea, Rep.	0.01	3,100	1985–92	0.3[i]	..	..	N	..	..	..	..
Kuwait	0.12	..	..	..	..	..	UK	..	..	..	..
Kyrgyz Republic	<0.005	<100	..	..	..	..	UK	..	..	..	..
Lao PDR	0.04	1,100	1990–93	1.2[n]	1993	0.0[p]	N	..	..	..	..
Latvia	0.01	<100	..	..	..	..	UK	..	1997	69	66
Lebanon	0.09	..	1993	2.2[l,p]	..	..	N	..	1996	69[m]	..
Lesotho	8.35	85,000	1993–94	35.6[e]	1994	12.9[f,h]	G	..	..	..	..
Libya	0.05	..	..	..	..	..	UK	..	..	..	..
Lithuania	0.01	<100	1995	0.0[e,s]	1995	0.0[s]	N	..	..	..	..
Macedonia, FYR	0.01	<100	..	..	..	..	UK	..	..	..	..
Madagascar	0.12	8,600	1996	0.3[n]	1996	0.1	N	3	..	..	..
Malawi	14.92	710,000	1994	86.0[n]	1996	21.9[f]	G	6	..	..	..
Malaysia	0.62	68,000	1997	59.5[l,o]	1996	0.2[f]	C	6	..	..	..
Mali	1.67	89,000	1997	31.8[n,q]	1997	2.7[q]	C	4	..	..	..
Mauritania	0.52	6,100	1996	1.7[e]	1993–94	0.5[q]	N	..	..	..	..
Mauritius	0.08	..	..	..	1986	0.0	UK	..	1996	28[m]	..
Mexico	0.35	180,000	1988–97	30.1[i]	1991–96	0.1[r]	C	..	1997	63[m]	..
Moldova	0.11	2,500	1995	0.1[l,s]	1995	0.0[s]	N	..	..	..	..
Mongolia	0.01	<100	1987–93	0.0[n]	1987–93	0.0	N	..	..	..	..
Morocco	0.03	..	1991–97	0.3[e]	1997	0.2[r]	N	..	..	..	..
Mozambique	14.17	1,200,000	1995	21.0[e,f]	1996	18.2[h]	G	10	1997	31	19
Myanmar	1.79	440,000	1997	51.0[f,l]	1997	1.5[f]	C	2	..	..	..
Namibia	19.94	150,000	1993–94	18.2[e,h]	1996	17.4[f]	G	0.02	..	..	..
Nepal	0.24	26,000	1997	1.5[e,f]	1992	0.0	N	7	..	..	..
Netherlands	0.17	14,000	1996	5.1[k,l]	1996	0.3[k]	C	..	..	..	..
New Zealand	0.07	1,300	1991–92	0.2[e,f]	..	..	N	..	..	..	..
Nicaragua	0.19	4,100	1997	0.2[n]	..	..	N	..	..	..	..
Niger	1.45	65,000	1997	25.0[n,q]	1993	1.3	C	..	..	..	..
Nigeria	4.12	2,300,000	1996	44.2[f,n]	1996	3.4[f]	C	37	1994	8[m]	..
Norway	0.06	1,300	1992	0.1[e,k,o]	..	..	N	..	1992	8	5
Oman	0.11	..	..	..	..	..	UK	..	..	..	..
Pakistan	0.09	64,000	1995	2.0[e,f]	1995	0.2[f]	N	103	..	..	..
Panama	0.61	9,000	..	..	1994	0.3	UK	..	..	..	..
Papua New Guinea	0.19	4,500	1995	1.9[e]	1995	0.2	N	..	1994	38	12
Paraguay	0.13	3,200	1987–90	8.8[i]	1992	0.0	C	..	1996	..	79
Peru	0.56	72,000	1997	14.0[i,p]	1996–97	0.5	C	..	..	..	..
Philippines	0.06	24,000	1994	0.1[f,n]	..	..	N	13	..	..	..
Poland	0.06	12,000	1995	4.8l	..	..	N	..	..	..	..
Portugal	0.69	35,000	1992	5.8[e,k,o]	..	..	C	..	..	..	..
Puerto Rico	..	..	1993	32.1[n]	1992–94	1.3[h]	C	..	..	..	..
Romania	0.01	5,000	..	..	..	..	UK	..	..	..	..
Russian Federation	0.05	40,000	1995	0.1[i]	1995	0.0	N	1	..	..	..

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	Adult HIV prevalence	People currently infected	Adult HIV-1 prevalence in selected populations				Stage of HIV/AIDS epidemic[a]	Socially marketed condom sales	Reported condom use with nonregular partner		
	% of population aged 15–49 **1997**	**1997**	Survey year	High-risk group % infected[b]	Survey year	Women attending urban antenatal clinics % infected[c]	**1997**	millions **1997**	Survey year	Male %	Female %
Rwanda	12.75	370,000	1996	34.8[e,f]	1996	17.9[f]	G	2	..	..	..
Saudi Arabia	0.01	..	..	..	..	..	UK	..	..	..	..
Senegal	1.77	75,000	1996	8.4[f,n]	1996	0.2[f]	C	2	..	..	..
Sierra Leone	3.17	68,000	1995	26.7[n]	1992	2.0[h,r]	C	..	..	..	..
Singapore	0.15	3,100	1992	3.6[j]	..	..	N	..	..	..	..
Slovak Republic	0.01	<100	1995	0.0[e,s]	1992	0.0	N	..	..	..	..
Slovenia	<0.005	<100	1995	0.0[l,s]	1995	0.0[s]	N	..	1996	17	18
South Africa	12.91	2,900,000	1994	20.1[e]	1997	16.0[w]	G	3	..	..	..
Spain	0.57	120,000	1996	45.0[k,l]	1995	0.3[k]	C	..	1995	49	33
Sri Lanka	0.07	6,900	1993	0.0[f,n]	1993	0.0[f]	N	7	..	..	..
Sudan	0.99	..	1989	19.1[e,f]	1995	3.0[h]	C	..	1995	20	17
Sweden	0.07	3,000	1995	5.3[k,l]	..	..	C	..	..	..	..
Switzerland	0.32	12,000	1996	3.3[k,l]	..	..	N	..	1994	57	37
Syrian Arab Republic	0.01	..	1994	1.0[e]	1993	0.0[r]	N	..	..	..	..
Tajikistan	<0.005	<100	..	..	..	..	UK	..	..	..	..
Tanzania	9.42	1,400,000	1993	60.9[n,p]	1995–96	13.7	G	11	1996	35	17
Thailand	2.23	780,000	1997	37.5[f,l]	1997	1.9[f]	C	..	..	..	..
Togo	8.52	170,000	1992	78.9[n,q]	1996	5.1[f]	G	4	..	..	..
Trinidad and Tobago	0.94	6,800	1993–95	11.9[e]	1995–96	1.0[h,r]	C	..	..	..	..
Tunisia	0.04	..	..	..	..	..	UK	..	..	..	..
Turkey	0.01	..	1992	0.1[e,s]	..	..	N	16	..	..	..
Turkmenistan	0.01	<100	..	..	..	..	UK	..	..	..	..
Uganda	9.51	930,000	1997	65.9[n,p]	1997	9.9[f,h]	G	17	1995	20	9
Ukraine	0.43	110,000	1997	13.1[f,l]	1997	0.1[r]	C	..	..	..	..
United Arab Emirates	0.18	..	..	..	..	..	UK	..	..	..	..
United Kingdom	0.09	25,000	1996	9.8[h,i,t]	1996	0.3[k]	C	..	1991	23	18
United States	0.76	820,000	..	..	..	..	UK	..	..	..	..
Uruguay	0.33	5,200	1996	13.0[l,q]	..	..	C	..	..	..	..
Uzbekistan	<0.005	<100	..	..	..	..	UK	..	..	..	..
Venezuela	0.69	82,000	1994	25.0[h,i]	..	..	C	0.1	..	..	..
Vietnam	0.22	88,000	1997	18.8[f,l]	1997	0.1[f]	C	33	1995	30[m]	..
West Bank and Gaza	..	..	..	..	..	..	UK	..	..	..	..
Yemen, Rep.	0.01	..	1992	0.0[e,o,p]	..	..	N	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	0.10	..	..	..	..	..	UK	..	..	..	..
Zambia	19.07	770,000	1992–93	58.0[d,e]	1995	33.8[p]	G	7	1996	46[x]	23[x]
Zimbabwe	25.84	1,500,000	1994–95	86.0[n]	1996	47.4[f]	G	2	1994	60	38

a. *C* is concentrated, *G* is generalized, *N* is nascent, *UK* is unknown. b. Samples of high-risk populations may not be representative of those populations. c. Not necessarily representative of women who do not use antenatal services. d. Female. e. Patients with sexually transmitted diseases. f. Data are averaged. g. Classification is based on previous years' observations that included HIV-2. h. Sample size unknown. i. Homosexual or bisexual men. j. Women without syphilis. k. UNAIDS and WHO 1998. Median. l. Injecting drug users. m. Both male and female. n. Sex workers. o. Male. p. Data are the best available but are not necessarily reliable due to small samples (<100). q. HIV-1 and/or HIV-2. r. Not specifically urban. s. WHO-EC Collaborating Centre on AIDS, European HIV Prevalence Database. t. UNAIDS, Epidemiological Fact Sheet. u. National AIDS Control Organization, Government of India. v. Military. w. National data. x. Urban sample only.

Confronting AIDS 2.17

About the data

At the end of 1998 the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimated that 33.4 million people worldwide were infected with the human immunodeficiency virus (HIV) or suffering from AIDS and that 13.9 million people had died of AIDS since the beginning of the epidemic. More than 9 of every 10 people infected with HIV live in developing countries, and two-thirds of all infections are in Sub-Saharan Africa. HIV infection and AIDS mortality disproportionately affect prime-aged adults at the peak of their economic and reproductive lives. Already the AIDS epidemic has resulted in huge setbacks in the quality of life in the most severely affected countries, reducing life expectancy as much as 10–20 years.

HIV prevalence and distribution

Because of the long symptom-free period between the time of HIV infection and the development of AIDS—an average of about 10 years—the number of people actually sick with AIDS at any time is only a small percentage of those infected. There are few nationally representative surveys of HIV infection levels. The estimates of HIV prevalence among adults and of the total number of people currently infected are based on plausible extrapolations from surveys of smaller, nonrepresentative groups.

HIV tends to move in a series of small, overlapping epidemics first among people who practice high-risk behavior—people with many sexual partners who do not use condoms and people who inject drugs and share unsterilized needles and syringes. These individuals are most likely to become infected when HIV first enters the population and are also most likely to unknowingly pass HIV to others. HIV typically spreads rapidly among those with the riskiest behavior. It then spreads more slowly among people with lower-risk behavior—some of whom are monogamous and do not inject drugs—through unprotected sex with an infected partner. Women who become infected can transmit HIV to their children before, during, or after birth. Preventing HIV transmission among those with the riskiest behavior as early as possible can have a large "multiplier effect" in preventing infections in the rest of the population.

Estimates of HIV prevalence for "high-risk" groups represent the results of a specific study or an average of prevalence rates from several sources or sites in a country for the most recent year available. The data come from surveys measuring HIV-1, except where otherwise noted. Footnotes indicate the groups to which the data refer. Because of the difficulty of establishing samples of individuals with certain characteristics, studies based on samples of high-risk populations may not be representative of those populations. Women attending prenatal clinics are assumed to have a lower risk of contracting HIV, but because they are a self-selected group, their HIV prevalence rates are not necessarily representative of other low-risk individuals who do not use these services. Further, these data may be collected from a nonrandom sample of clinics.

Whenever possible, the entries represent the results of one or more studies with a sample size of at least 100 people. If more than one study was available for the same year and covered comparable geographic areas, an unweighted average was taken. Surveys with exceptionally small sample sizes (less than 100) were used if they provided the only estimate available. Estimates based on small samples have been noted.

Stages of the epidemic

The stage of the HIV/AIDS epidemic indicates the extent to which HIV has spread among those practicing high-risk behavior and outward to low-risk populations. Countries are classified by stage of the epidemic if HIV prevalence has been reported for a high-risk population since 1992. But there are many countries for which the available data predate 1992 and many with no information on high-risk groups. The table reflects conservative estimates of the spread of HIV; many countries may be further along than indicated. China and India have been classified as having concentrated epidemics on the basis of a concentrated epidemic in at least one province or state.

Condom sales and condom use

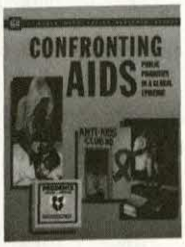
Despite important progress in prolonging and improving the quality of AIDS patients' lives, there still is no cure for HIV/AIDS nor is there an effective preventive vaccine. For the time being the most effective way of reducing HIV transmission is through behavioral change—reducing the number of sexual partners, increasing condom use, and using safe injecting practices. A number of countries have adopted social marketing programs that sell condoms at subsidized prices at nontraditional outlets and popularize their use. In most countries condoms are also distributed free of charge through government programs and can be purchased from private sources.

The effect of increased condom use on the spread of HIV infection will depend on the extent to which condom use increases among people with the largest number of partners. The data on condom use with nonregular partners come from nationally representative surveys of sexual behavior as reported to UNAIDS or calculated directly from Demographic and Health Surveys.

Definitions

- **Adult HIV prevalence** is the percentage of people aged 15–49 who are infected with HIV. • **People currently infected** include all estimated cases, regardless of age. • **Adult HIV-1 prevalence** in high-risk groups represents the most recent and highest level of infection found in one of the following groups: sex workers, injecting drug users, patients with sexually transmitted diseases, men who have sex with men, or the military. • **Stage of HIV/AIDS epidemic** is defined as *nascent* (N) if HIV prevalence in high-risk populations is less than 5 percent, *concentrated* (C) if HIV prevalence in high-risk populations is 5 percent or higher but still less than 5 percent among women attending antenatal clinics and *generalized* (G) if HIV prevalence among women attending antenatal clinics is 5 percent or higher. Epidemics in countries with no data on prevalence in high-risk groups or only data prior to 1992 are classified as *unknown* (UK) unless data from an earlier year with a sample size greater than 100 indicated very high infection levels in a high-risk group. • **Socially marketed condom sales** refer to sales through special programs that sell condoms at low, heavily subsidized prices and make condoms available through nontraditional outlets. • **Reported condom use with nonregular partner** shows the percentage of men and women who used a condom with their last nonregular partner (that is, not a spouse or long-term partner) in the past 12 months or who ever used a condom with a nonregular partner in some shorter reference period.

Data sources



The data presented here are drawn from a variety of sources, including the World Bank's *Confronting AIDS: Public Priorities in a Global Epidemic* (1997b); the U.S. Bureau of the Census's HIV/AIDS Surveillance Database (1998); the WHO-EC Collaborating Centre on AIDS's European HIV Prevalence Database; UNAIDS and WHO's *Report on the Global HIV/AIDS Epidemic* (June 1998); UNAIDS's Epidemiological Fact Sheets; the government of India; DKT International's *1997 Contraceptive Social Marketing Statistics* (1998); and results of the Demographic and Health Surveys.

2.18 Mortality

	Life expectancy at birth		Infant mortality rate		Under-five mortality rate		Child mortality rate		Adult mortality rate			
	years		per 1,000 live births		per 1,000		Male per 1,000	Female per 1,000	Male per 1,000		Female per 1,000	
	1980	1997	1980	1997	1980	1997	1988–98[a]	1988–98[a]	1980	1997	1980	1997
Albania	69	72	47	26	57	40	15	15	140	122	82	65
Algeria	59	70	98	32	139	39	..	..	226	160	197	125
Angola	41	46	154	125	261	209	..	..	569	412	458	355
Argentina	70	73	35	22	38	24	..	..	205	165	102	80
Armenia	73	74	26	15	..	..	..	..	158	164	85	81
Australia	74	78	11	5	13	7	..	..	178	110	85	57
Austria	73	77	14	5	17	7	..	..	197	123	92	61
Azerbaijan	68	71	30	20	..	23	..	..	262	213	127	101
Bangladesh	48	58	132	75	211	104	37	47	383	285	388	309
Belarus	71	68	16	12	..	..	..	..	255	333	95	115
Belgium	73	77	12	6	15	7	..	..	173	134	90	62
Benin	48	53	116	88	214	149	89	90	486	362	397	304
Bolivia	52	61	118	66	170	96	53	47	357	269	273	220
Bosnia and Herzegovina	70	..	31	13	..	..	..	..	181	170	108	93
Botswana	58	47	71	58	94	88	18	16	341	600	278	552
Brazil	63	67	70	34	..	44	8	9	221	202	161	139
Bulgaria	71	71	20	18	25	24	..	..	190	213	106	106
Burkina Faso	44	44	121	99	..	169	107	110	467	540	362	520
Burundi	47	42	122	119	193	200	101	114	489	550	400	491
Cambodia	39	54	201	103	330	147	..	..	473	349	355	303
Cameroon	50	57	94	52	173	78	64	75	489	390	415	352
Canada	75	79	10	6	13	8	..	..	161	106	85	52
Central African Republic	46	45	117	98	..	160	63	64	540	567	424	476
Chad	42	49	123	100	235	182	106	99	556	448	449	383
Chile	69	75	32	11	35	13	3	2	218	143	120	73
China	67	70	42	32	65	39	10	11	185	165	148	137
Hong Kong, China	74	79	11	5	..	..	..	..	150	109	87	56
Colombia	66	70	41	24	58	30	7	7	237	210	162	115
Congo, Dem. Rep.	49	51	112	92	210	148	..	..	..	..	..	..
Congo, Rep.	50	48	89	90	125	145	..	..	408	464	298	402
Costa Rica	73	77	20	12	29	15	..	..	159	117	100	70
Côte d'Ivoire	49	47	108	87	170	140	71	58	421	510	346	490
Croatia	70	72	21	9	23	10	..	..	233	176	106	78
Cuba	74	76	20	7	22	9	..	..	135	125	94	80
Czech Republic	70	74	16	6	19	8	..	..	225	181	102	82
Denmark	74	75	8	6	10	6	..	..	163	144	102	81
Dominican Republic	64	71	76	40	92	47	13	13	183	150	138	94
Ecuador	63	70	74	33	101	39	12	9	229	180	176	104
Egypt, Arab Rep.	56	66	120	51	175	66	22	28	257	198	204	174
El Salvador	57	69	84	32	120	39	17	20	410	207	178	117
Eritrea	44	51	*91*	62	..	95	89	78	..	450	..	403
Estonia	69	70	17	10	25	13	..	..	291	284	110	95
Ethiopia	42	43	155	107	213	175	..	..	491	550	401	510
Finland	73	77	8	4	9	5	..	..	206	141	74	61
France	74	78	10	5	13	6	..	..	190	130	85	51
Gabon	48	52	116	87	194	136	..	..	474	380	387	340
Gambia, The	40	53	159	78	216	..	83	79	584	404	466	339
Georgia	71	73	25	17	..	21	..	..	210	197	94	83
Germany	73	77	12	5	16	6	..	..	177	133	90	66
Ghana	53	60	94	66	157	102	63	62	400	278	334	226
Greece	74	78	18	7	23	9	..	..	134	114	86	61
Guatemala	57	64	84	43	..	55	22	24	336	296	266	193
Guinea	40	46	185	120	299	182	122	112	589	399	507	400
Guinea-Bissau	39	44	169	130	290	220	..	..	535	469	517	416
Haiti	51	54	123	71	200	125	59	58	348	427	275	332
Honduras	60	69	70	36	103	48	..	..	306	193	237	115

Mortality 2.18

	Life expectancy at birth		Infant mortality rate		Under-five mortality rate		Child mortality rate		Adult mortality rate			
	years		per 1,000 live births		per 1,000		Male per 1,000	Female per 1,000	Male per 1,000		Female per 1,000	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1988–98**[a]	**1988–98**[a]	**1980**	**1997**	**1980**	**1997**
Hungary	70	71	23	10	26	12	..	..	270	330	130	138
India	54	63	115	71	177	88	29	42	261	212	279	202
Indonesia	55	65	90	47	125	60	30	27	368	240	308	188
Iran, Islamic Rep.	60	69	87	32	126	35	..	..	221	165	190	162
Iraq	62	58	80	112	95	140	..	..	207	198	191	174
Ireland	73	76	11	5	14	7	..	..	175	135	103	73
Israel	73	77	15	7	19	8	..	..	138	111	85	69
Italy	74	78	15	5	17	7	..	..	163	117	80	54
Jamaica	71	75	21	12	39	14	..	..	186	141	121	86
Japan	76	80	8	4	11	6	..	..	129	100	70	46
Jordan	*64*	71	41	29	48	35	6	6	..	160	..	121
Kazakhstan	67	65	33	24	..	29	10	5	312	383	140	168
Kenya	55	52	75	74	115	112	33	33	417	425	339	397
Korea, Dem. Rep.	67	63	32	56	43	74	..	..	270	268	156	207
Korea, Rep.	67	72	26	9	18	11	..	..	270	209	156	97
Kuwait	71	76	27	12	35	13	..	..	172	124	116	65
Kyrgyz Republic	65	67	43	28	..	..	10	11	296	305	131	143
Lao PDR	45	53	127	98	200	..	..	..	531	378	439	323
Latvia	69	69	20	15	26	19	..	..	281	306	106	100
Lebanon	65	70	48	28	..	32	..	..	241	177	181	134
Lesotho	53	56	119	93	168	137	..	..	371	320	279	282
Libya	60	70	79	24	..	30	6	5	276	187	218	135
Lithuania	71	71	20	10	24	13	..	..	243	269	92	88
Macedonia, FYR	..	72	54	16	69	17	..	..	..	164	..	107
Madagascar	51	57	119	94	216	158	75	68	353	332	278	295
Malawi	44	43	169	133	265	224	126	114	429	454	349	471
Malaysia	67	72	30	11	42	14	4	4	230	187	149	114
Mali	42	50	184	118	..	235	136	138	454	416	362	334
Mauritania	47	53	120	92	175	149	..	..	505	344	416	294
Mauritius	66	71	32	20	40	23	..	..	277	205	181	97
Mexico	67	72	51	31	74	38	15	17	205	166	121	83
Moldova	66	67	35	20	..	24	..	..	289	316	173	177
Mongolia	58	66	82	52	..	68	..	..	320	203	273	170
Morocco	58	67	99	51	152	67	21	19	264	207	207	150
Mozambique	44	45	145	135	223	201	84	82	468	400	361	354
Myanmar	52	60	109	79	134	131	..	..	384	263	313	217
Namibia	53	56	90	65	114	101	30	34	427	366	366	341
Nepal	48	57	132	83	180	117	..	..	376	274	395	314
Netherlands	76	78	9	5	11	7	..	..	133	121	74	62
New Zealand	73	77	13	7	16	7	..	..	177	132	91	68
Nicaragua	59	68	84	43	143	57	..	..	277	202	189	126
Niger	42	47	150	118	320	..	212	232	562	450	453	342
Nigeria	46	54	99	77	196	122	118	202	535	398	453	335
Norway	76	78	8	4	11	6	..	..	144	114	71	59
Oman	60	73	41	18	95	28	..	..	389	143	326	108
Pakistan	55	62	127	95	161	136	22	37	283	175	291	158
Panama	70	74	32	21	36	26	..	..	172	137	117	81
Papua New Guinea	51	58	78	61	100	82	28	21	514	348	478	333
Paraguay	67	70	50	23	61	28	10	12	198	185	144	124
Peru	60	69	81	40	126	52	19	20	287	200	229	124
Philippines	61	68	52	35	81	41	28	25	323	200	259	153
Poland	70	73	26	10	..	12	..	..	254	238	105	91
Portugal	71	75	24	6	31	8	..	..	199	154	95	72
Puerto Rico	74	75	19	11	..	..	..	..	159	158	78	63
Romania	69	69	29	22	36	26	7	5	216	270	119	119
Russian Federation	67	67	22	17	..	25	3	2	341	370	120	130

2.18 Mortality

	Life expectancy at birth		Infant mortality rate		Under-five mortality rate		Child mortality rate		Adult mortality rate			
	years		per 1,000 live births		per 1,000		Male per 1,000	Female per 1,000	Male per 1,000		Female per 1,000	
	1980	1997	1980	1997	1980	1997	1988–98[a]	1988–98[a]	1980	1997	1980	1997
Rwanda	46	40	128	124	..	209	87	73	503	585	409	534
Saudi Arabia	61	71	65	21	85	28	..	..	283	171	241	147
Senegal	45	52	117	70	190	110	76	74	586	453	516	381
Sierra Leone	35	37	190	170	336	286	..	..	540	544	527	483
Singapore	71	76	12	4	13	6	..	..	199	136	115	77
Slovak Republic	70	73	21	9	23	..	..	..	226	208	105	90
Slovenia	70	75	15	5	18	6	..	..	250	173	105	76
South Africa	57	65	67	48	91	65	..	..	..	261	..	160
Spain	76	78	12	5	16	7	..	..	144	124	69	56
Sri Lanka	68	73	34	14	48	19	10	9	210	156	152	99
Sudan	48	55	94	71	145	115	62	63	537	373	462	328
Sweden	76	79	7	4	9	5	..	..	142	105	76	54
Switzerland	76	79	9	5	11	6	..	..	145	106	70	50
Syrian Arab Republic	62	69	56	31	73	38	..	..	..	206	..	141
Tajikistan	66	68	58	30	..	36	..	..	190	234	129	143
Tanzania	50	48	108	85	176	136	59	52	451	502	370	460
Thailand	64	69	49	33	58	38	11	11	280	219	210	122
Togo	49	49	110	86	175	138	75	90	457	477	375	432
Trinidad and Tobago	68	73	35	12	40	15	4	3	234	168	166	103
Tunisia	62	70	69	30	100	33	19	19	227	171	224	153
Turkey	61	69	109	40	133	50	12	14	..	165	..	120
Turkmenistan	64	66	54	40	..	50	..	..	263	282	154	159
Uganda	48	42	116	99	180	162	82	72	463	580	395	590
Ukraine	69	67	17	14	..	17	..	..	282	350	112	135
United Arab Emirates	68	75	55	8	..	11	..	..	153	127	106	93
United Kingdom	74	77	12	6	14	7	..	..	160	123	96	67
United States	74	76	13	7	15	..	..	..	194	150	102	80
Uruguay	70	74	37	16	42	20	..	..	176	171	91	76
Uzbekistan	67	69	47	..	..	31	..	..	219	230	116	128
Venezuela	68	73	36	21	42	25	..	..	219	160	123	91
Vietnam	63	68	57	29	105	40	..	..	262	205	204	150
West Bank and Gaza	..	71	..	25	..	28	10	7	..	170	..	112
Yemen, Rep.	49	54	141	96	198	137	41	47	382	340	304	330
Yugoslavia, FR (Serb./Mont.)	70	72	33	14	..	20	..	..	164	180	106	108
Zambia	50	43	90	113	149	189	96	93	482	512	413	524
Zimbabwe	55	52	80	69	108	108	26	26	389	449	321	388
World	**63 w**	**67 w**	**80 w**	**56 w**	**125 w**	**79 w**			**247 w**	**211 w**	**190 w**	**162 w**
Low income	52	59	116	82	182	118			327	274	312	255
Middle income	65	69	57	34	85	43			230	199	161	137
Lower middle income	65	69	56	36	87	44			231	200	166	142
Upper middle income	65	70	60	30	..	38			226	193	136	116
Low & middle income	60	65	87	60	138	84			266	227	217	182
East Asia & Pacific	65	69	56	37	83	47			222	183	180	148
Europe & Central Asia	68	69	41	23	..	30			281	287	115	122
Latin America & Carib.	65	70	60	32	..	41			225	189	151	116
Middle East & N. Africa	59	67	95	49	137	63			248	190	207	164
South Asia	54	62	119	77	180	100			279	219	292	212
Sub-Saharan Africa	48	51	115	91	189	147			486	428	403	375
High income	74	77	13	6	15	7			174	133	91	66
Europe EMU	74	77	12	5	16	6			172	128	83	59

a. Data are for the most recent year available.

Mortality 2.18

About the data

Age-specific mortality data such as infant and child mortality rates, along with life expectancy at birth, are probably the best general indicators of a community's current health status and are often cited as overall measures of a population's welfare or quality of life. They may be used nationally to identify populations in need, or internationally to compare levels of socioeconomic development. Despite variations in the quality of these data, discussed below, there is general agreement that age-specific mortality rates, especially child mortality rates, are a key indicator in any health monitoring system.

The main sources of mortality data are vital registration systems and direct or indirect estimates based on sample surveys or censuses. A complete vital registration system—that is, a system covering at least 90 percent of the population—is the best source of age-specific mortality data. But such systems are fairly uncommon in developing countries. Thus estimates must be obtained from sample surveys or derived by applying indirect estimation techniques to registration, census, or survey data. Survey data are subject to recall error; and surveys estimating infant deaths require large samples, because households in which a birth occurs during a given year cannot ordinarily be preselected for sampling. Indirect estimates rely on estimated actuarial ("life") tables that may be inappropriate for the population concerned (see box). Because life expectancy at birth is constructed using infant mortality data and life tables, similar reliability issues arise for this indicator.

Life expectancy at birth and age-specific mortality rates for 1997 are generally estimates based on vital registration or the most recent census or survey available (see *Primary data documentation*). Extrapolations based on outdated surveys may not be reliable for monitoring changes in health status or for comparative analytical work.

Infant and child mortality rates are higher for boys than for girls in countries in which parental gender preferences are absent. Child mortality better captures the effect of gender discrimination than infant mortality, as malnutrition and medical interventions are more important in this age group. When female child mortality is higher, as in several countries in South Asia, it is likely that girls have unequal access to resources.

Adult mortality rates have increased in many countries in Sub-Saharan Africa as well as in Eastern Europe and the countries of the former Soviet Union. In Sub-Saharan Africa the cause of the increase is AIDS-related mortality and is affecting both men and women. In Europe and Central Asia the causes are more diverse and affect men more. Among the causes are a high prevalence of smoking, a high-fat diet, excessive alcohol use, and stressful conditions related to the economic transition.

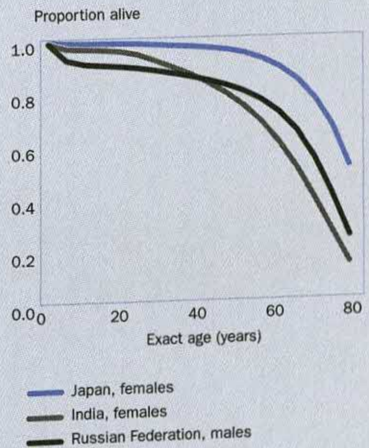
Box 2.18

Life tables: an essential tool for mortality analysis

Model life tables are used to derive mortality estimates for countries without complete vital registration, or to supplement mortality information gathered in surveys, in order to estimate an entire schedule of mortality rates and life expectancies. A mortality schedule thus constructed is a period life table that describes the experience of a hypothetical population at a current or recent point in time. If a cohort of children were to experience mortality rates consistent with this mortality schedule through their lifetime, the period table would also be a generation life table, describing the mortality experience of an actual cohort.

The life table measures survival from one age to another and provides the proportion of a cohort alive at each age. The figure shows the survival curves of three hypothetical cohorts based on current mortality rates. The differing slopes of the curves indicate the differences in the force of mortality for each cohort. Middle-aged men in Russia are more likely to die than are middle-aged women in India. The survival curve for Japanese women summarizes the lowest set of age-specific mortality rates in the world today. At age 80 more than half the original cohort of Japanese women would still be alive if subject to current age-specific mortality throughout their lives.

Survival curves reflect differences in the force of mortality



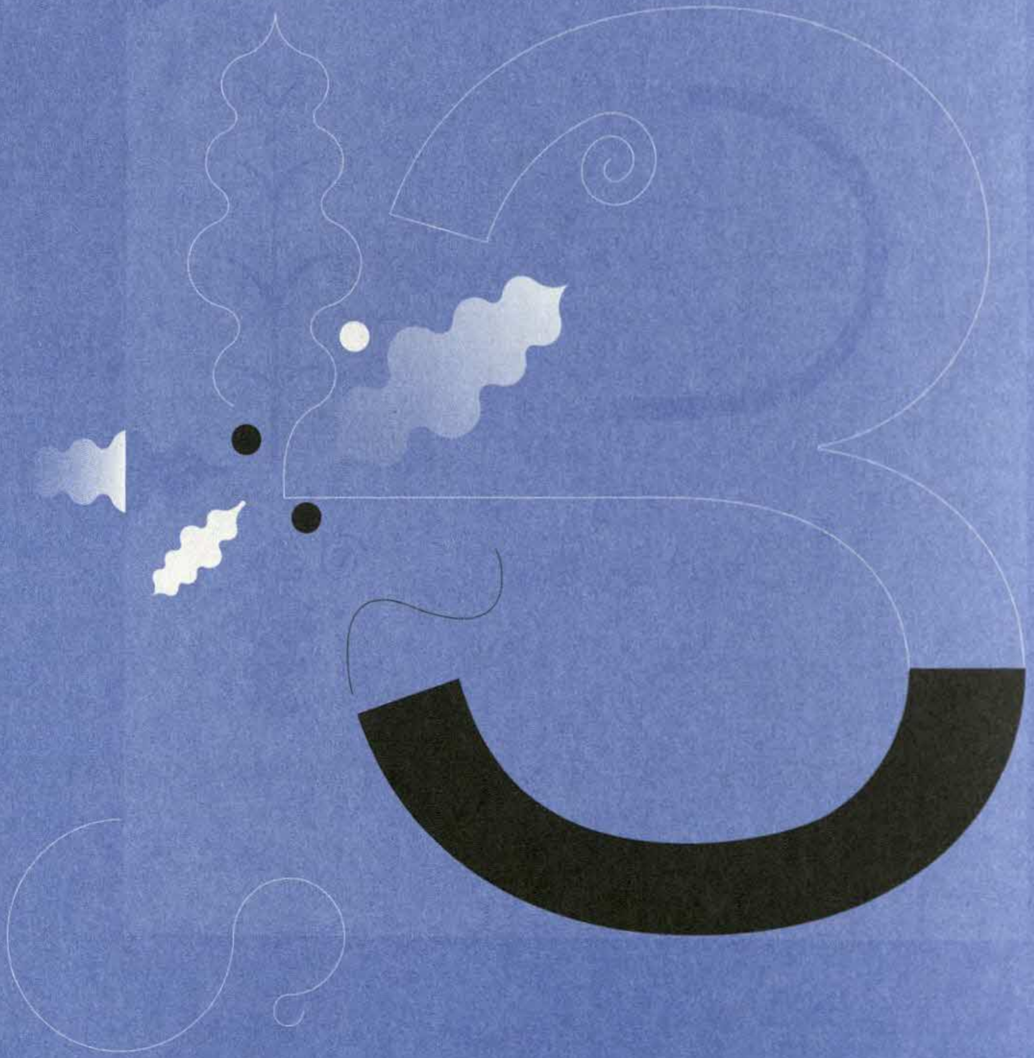
Source: Coale and Demeny 1983.

Definitions

- **Life expectancy at birth** is the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. • **Infant mortality rate** is the number of infants who die before reaching one year of age, per 1,000 live births in a given year. • **Under-five mortality rate** is the probability that a newborn baby will die before reaching age five, if subject to current age-specific mortality rates. • **Child mortality rate** is the probability of dying between the ages of one and five, if subject to current age-specific mortality rates.
- **Adult mortality rate** is the probability of dying between the ages of 15 and 60—that is, the probability of a 15-year-old dying before reaching age 60, if subject to current age-specific mortality rates between ages 15 and 60.

Data sources

United Nations Department of Economic and Social Affairs, *Population and Vital Statistics Report;* demographic and health surveys from national sources; and United Nations Children's Fund (UNICEF), *The State of the World's Children 1999.*


3

ENVIRONMENT

The natural environment presents familiar opportunities: rich soils, abundant water, natural beauty, minerals, energy, forests, and fish, all sources of income and human welfare. Some, with proper management, are renewable. But others are exhaustible. And as populations and economies grow, many nations crash into the constraints. Air and water do not provide infinite sinks for the waste products of human activity. Mismanagement of the resource base can lead to the collapse of biological resources and the degradation of both natural and agricultural areas. And while many traditional environmental issues relate to natural areas or to sectors that depend directly on the natural resource base (agriculture, forestry, and fisheries), the rising tide of urbanization presents new challenges for the preservation of environmental quality (box 3a).

There is a substantial and growing base of biophysical indicators to inform decisionmakers, analysts, and the public about the state of the natural environment and the range of human activities that place pressures on the environment (box 3b). There are even rudimentary indicators pertaining to human responses to changing environmental quality. The Organisation for Economic Co-operation and Development's (OECD) Pressure-State-Response framework for environmental indicators is gradually being fleshed out. But what sorts of indicators can deepen our understanding of the links between the economy and the environment? And what can we say about the sustainability of development?

Toward a measure of sustainability

Many of the key indicators in the *Economy* section are derived from a consistent framework, the System of National Accounts, which relates to a specific body of macroeconomic theory. This is a great source of strength for those indicators, because there is considerable understanding of how one economic aggregate relates to another. Many traditional environmental indicators, by contrast, have no similar integrating framework. The Pressure-State-Response framework is at first glance causal: human activities place pressure on the environment, leading to changes in the environmental state that ultimately produce human responses. But this causality breaks down as soon as there is aggregation of indicators or sufficient complexity in the causes of environmental change.

Given the close link between economic activity and environmental change, there is a strong argument for developing indicators that integrate the economy and the environment more closely. One promising approach is environmental

Box 3a

The environmental challenges of urbanization

An important addition to this year's *World Development Indicators* is a table of city indicators on the urban environment (table 3.11). Although not all countries are represented, the problems highlighted are common to most of the world's cities—in rich and poor countries alike. The challenge is to identify the most serious environmental problems, implement policies to address these issues, and then measure the effect of these policies through various indicators. (More general national data on urbanization are in table 3.10.)

Cities, already home to almost half the world's people, are growing rapidly in both size and number, especially in developing regions, where people flock to the cities in search of work and a higher standard of living. In Asia, for example, although most people still live in rural areas, the urban population is expected to reach 2.5 billion in 2025, three times the 1990 level. At present 87 Asian cities (38 of them in China, 23 in India) have more than a million people each. In the past two decades the urban population has grown globally at an average rate of 4.2 percent a year. The extent of urbanization is greatest in Latin America, where the urban population accounts for 74 percent of the total, even more than Europe's 66 percent. Sub-Saharan Africa, with only 32 percent of its people in urban areas, remains quite rural by comparison.

Urbanization by itself is not the environmental issue. Instead, environmental problems arise from the urban byproducts of transport, industrial activities, and the overcrowding of human habitation. The problems include pollution of the air and water and accumulation of solid waste. The largest and most important cost of urban pollution is to human health. World Bank studies (1997a) show that air and water pollution in many of the world's major cities can cause tens of thousands of deaths, millions of cases of moderate to severe sickness, and billions of dollars in lost productivity and other damage—sometimes within only one major city. Although all the world's megacities share these problems, water pollution tends to be most serious in South, Southeast, and Central Asia—and air pollution has the biggest impact in China, Latin America, and Eastern Europe.

Not only are the human and financial costs of pollution large, they tend to fall disproportionately on the poor. So, addressing pollution issues is justified on equity grounds as well as economic and environmental grounds. Table 3.11 highlights many of these issues with indicators on income levels, income distribution, crowding, and access to sanitation, potable water, and solid waste collection. Selected data on air quality, an important determinant of health effects, are in table 3.13.

Fortunately, we are finding that many effective interventions have quite reasonable costs per life saved—often $1,000 or less (World Bank 1997a). Reducing pollution also produces other important benefits, such as less damage to buildings and ecosystems from polluted air, new recreational opportunities in cleaner lakes, rivers, and seashores, and the improved aesthetic value of a cleaner, more natural environment.

Box 3b

Measuring the environment

Some environmental indicators deal with "goods," such as protected areas or biodiversity (table 3.4). Others measure "bads"—deforestation, air and water pollution (tables 3.1, 3.6, and 3.13). Still others monitor the effects of environmental degradation—waterborne disease, species loss, numbers of threatened species. Such indicators are important because the links between the environment and the economy are often direct and immediate.

But many relevant indicators are not available because of weaknesses in country coverage and concerns about the quality and comparability of data. Some environmental indicators are not meaningful at a national level. The world is divided into nation-states, and activities in one may have consequences for others because air and water pollution do not respect national boundaries. Many other environmental problems are highly localized and location-specific. Any comprehensive set of indicators must thus embrace local, national, regional, and global aspects of environmental problems.

The main indicators presented here cover important themes for which national information is available: land use, deforestation, biodiversity, protected areas, freshwater, energy production and use, energy efficiency and trade, sources of electricity generation, carbon dioxide emissions, urbanization, traffic and congestion, air pollution, and government commitment to environmental management. Two new sets of indicators, relating to "genuine" savings and city-level issues, are introduced.

accounting, which aims to derive "greener" measures of national income, savings, and wealth by adding natural resources and pollutants to the assets and liabilities measured in the standard national accounts. This expansion of the balance sheet to include natural assets and liabilities is the basis for the United Nations System of Integrated Environmental and Economic Accounts (United Nations 1993a). The first cross-country estimates of net savings adjusted for resource depletion and environmental damage were published by Pearce and Atkinson (1993).

Extending the asset concept further, development may usefully be conceived as a process of portfolio management, where the portfolio consists of not only produced assets but also natural resources and human capital. In this view, development outcomes are linked to the production of capital goods, the exploitation of natural resources, and the accumulation of human skills. Measuring changes in this portfolio provides a means to track development progress and to give a first indication of its sustainability.

Sustainability and sustainable development have many possible definitions. Broadly speaking, sustainable development deals with whether current actions limit or reduce the income and welfare opportunities for future generations. This question is generally assumed to have three facets: economic, ecological, and social. Economists attempt to simplify the question by assuming a social welfare function that reflects the contributions of each facet to human well-being. The question of sustainability then comes down to whether there is an expected decline in welfare along the future development path as a result of decisions made in the present.

The link between sustainable development and expanded asset accounting rests on the assumption that flows of income and well-being are ultimately derived from the total stocks of produced, natural, and human assets. Declines in the aggregate value of these stocks must eventually lead to declines in welfare. One measure of such changes in total assets is provided by "genuine" saving: the true savings rate of a nation, accounting for the measured economic "surplus" as well as the depletion of natural resources, accumulation of pollutants, and investments in human capital. The first estimates of genuine savings were published in *Expanding the Measure of Wealth* (World Bank 1997c), and they are updated here (table 3.15).

The overall accounting structure is straightforward: genuine savings equal gross domestic savings, minus depreciation of produced assets, minus depletion of minerals and energy, minus net depletion of forests, minus pollution damage (not elsewhere measured), plus investments in human capital. Note that net foreign savings are included implicitly in gross savings.

Although the theoretical link between genuine saving and sustainability is clear, there are important reasons for this section to be titled "Toward a measure of sustainability." Each of the adjustments required to derive genuine savings from gross savings involves the use of estimates that may vary, often significantly, from what would constitute an ideal measure. Moreover, because the accounting is not exhaustive (in particular, soil degradation, local air and water pollution, and fishery depletion are excluded for lack of comprehensive data), there is an inherent upward bias in the genuine savings measures, and thus in the resources estimated as available for future development.

A brief summary of the limitations of the data and the approximations used to calculate genuine savings illustrates these concerns:

- Depreciation of produced assets should represent the decline in market value of these assets as a result of both wear and tear in use and obsolescence. In practice, most countries assume certain fixed asset lives and model depreciation on this basis. Where tax records are the source of depreciation estimates, the tax laws may themselves influence how institutions estimate depreciation. Because of technological improvements, obsolescence has become a more important element of depreciation, and in practice, the shorter economic life of assets that become obsolescent cannot be predicted.
- Depletion of exhaustible resource deposits should be similarly measured as the change in market value of these deposits as a result of extraction. But markets for resource deposits generally do not exist. This leads to a reliance on estimates of resource rents and assumptions about future rents in valuing depletion. Resource rents represent the difference between the market price of a unit of resource and the economic cost (including returns on capital) of extracting the resource.
- Net forest depletion figures are calculated as the estimated levels of unit resource rents times the difference between harvest rates and net natural growth of forests. Net natural growth estimates by region are based on expert opinion at the World Bank. Excess deforestation is not captured by this measure.
- Pollution damage is estimated only for carbon dioxide emissions, which means that local air and water pollutants are excluded (largely for lack of comparable local damage estimates). The damage estimate for carbon dioxide emissions is itself controversial, given the range of assumptions about the future that go into it.
- Investment in human capital is measured simply as current education expenditures (that is, operating as opposed to capital expenditures), which in most cases can be expected to understate the incremental asset value created. Depreciation of human capital, through death and obsolescence of skills, is not estimated.

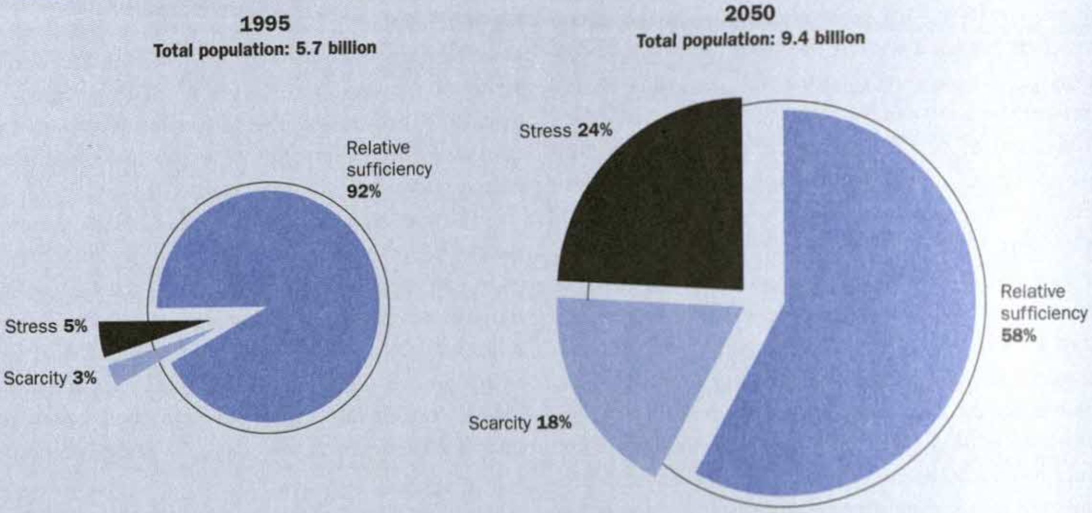
The genuine savings estimates here must thus be heavily qualified. But making progress on sustainability indicators is important enough to present these first steps toward a measure of sustainability. The measures may be imperfect, but it is clear that low or negative genuine savings rates are an issue for many developing countries.

Beyond the savings analysis, many components of genuine savings are of considerable interest on their own, particularly the estimates of resource depletion. Broadly speaking, the lowest rates of genuine saving are recorded for the countries with the highest dependence on resource rents relative to GDP, particularly for countries endowed with minerals and fossil fuels. These rents are a considerable share of GDP in many countries, suggesting that the management of natural resources and resource revenues should become an even more important economic management issue in these countries.

There is also much to be gained from presenting environmental issues in a framework that ministries of finance and planning can relate to. Too often ministries of environment and natural resources design policies in isolation from the broader macroeconomic framework—and finance and planning ministries ignore the environment and natural resources because they do not fit into their own indicator framework and budget lines. Genuine savings can begin to bridge this gap.

More than 430 million people live in countries with water stress (less than 1,700 cubic meters of freshwater available per person) or water scarcity (less than 1,000 cubic meters per person), facing chronic and widespread water shortages. The share of the world's population experiencing water stress could increase more than fivefold by 2050.

World population in freshwater scarcity, stress, and relative sufficiency, 1995 and 2050

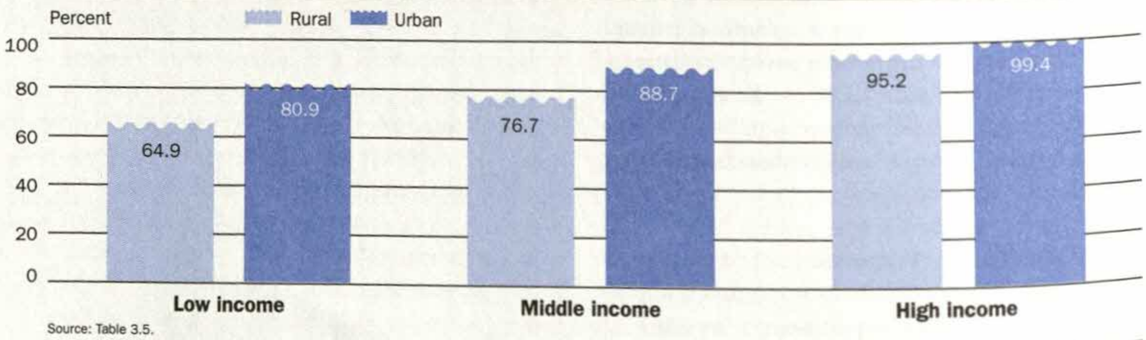


Note: Pie size is proportional to the world population in the designated year. Source: Gardner-Outlaw and Engelman 1997.

WATER

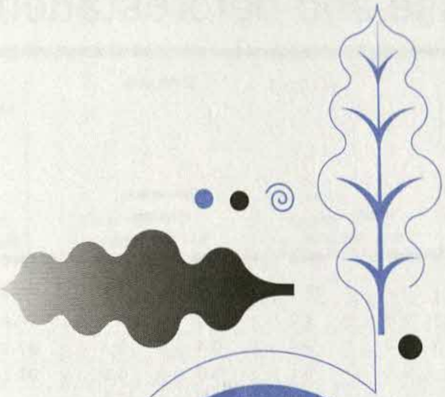
More than one billion of the world's people lack access to safe water: some 270 million in urban areas and close to 900 million in rural areas. Almost all of them live in low- and middle-income economies.

Population with access to safe water, 1995



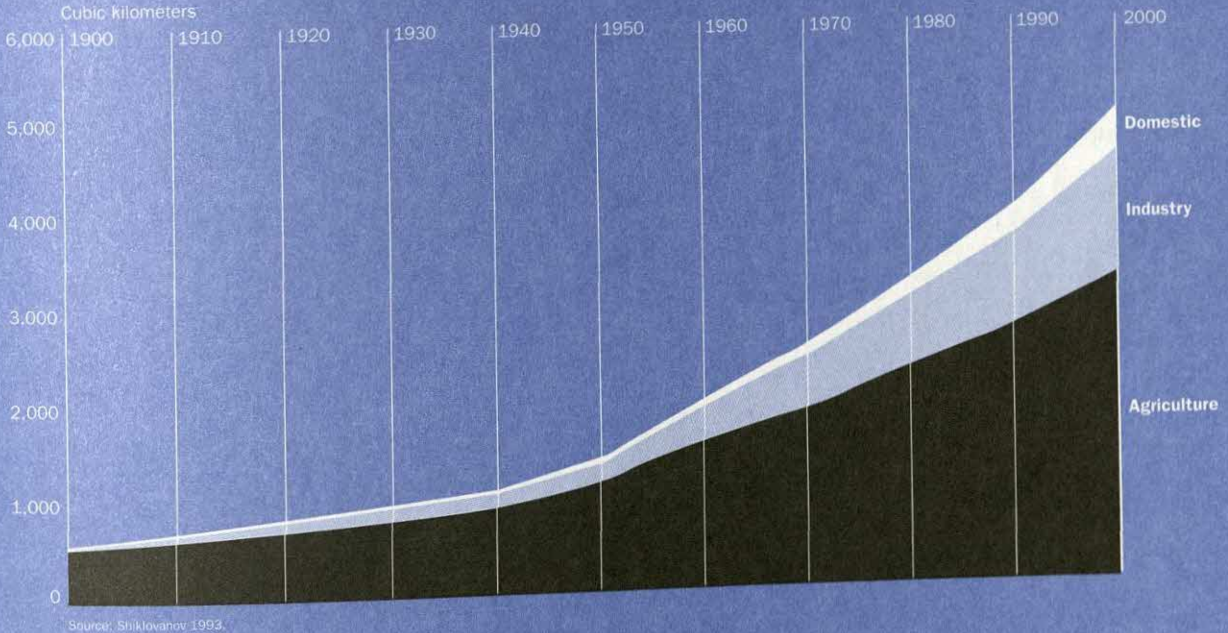
Source: Table 3.5.

The availability and quality of water are crucial to economic growth and development—and to the survival of terrestrial and aquatic systems. Global per capita water supplies are declining and are now a third lower than they were 25 years ago. Further increases in population and economic activity are expected to boost demand for water, exposing many countries to periodic water stress.



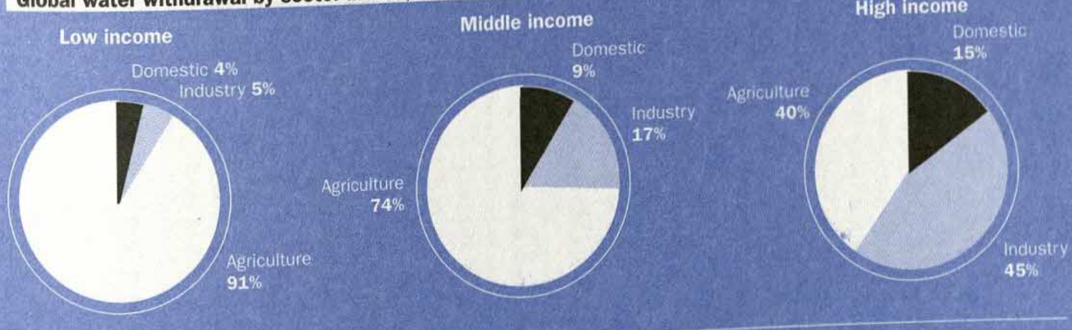
Global water withdrawals of freshwater have increased almost tenfold in this century.

Global water withdrawal by sector, 1900–2000



Source: Shiklovanov 1993.

Global water withdrawal by sector in low-, middle-, and high-income economies



Source: Table 3.5.

3.1 Land use and deforestation

	Land area	Rural population density	Land use						Forest area	Average annual deforestation	
	thousand sq. km	people per sq. km of arable land	Arable land % of land area		Permanent cropland % of land area		Other % of land area		thousand sq. km	sq. km	% change
	1996	1996	1980	1996	1980	1996	1980	1996	1995	1990–95	1990–95
Albania	27	355	21.4	21.1	4.3	4.6	74.4	74.4	10	0	0.0
Algeria	2,382	166	2.9	3.2	0.3	0.2	96.8	96.6	19	234	1.2
Angola	1,247	258	2.3	2.4	0.4	0.4	97.3	97.2	222	2,370	1.0
Argentina	2,737	16	9.1	9.1	0.8	0.8	90.1	90.1	339	894	0.3
Armenia	28	197	..	21.2	..	3.5	..	78.7	3	–84	–2.7
Australia	7,682	6	5.7	6.5	0.0	0.0	94.2	93.9	409	–170	0.0
Austria	83	202	18.6	17.2	1.2	1.1	80.2	81.7	39	0	0.0
Azerbaijan	87	208	..	18.5	..	4.6	..	76.9	10	0	0.0
Bangladesh	130	1,161	68.3	65.3	2.0	2.5	29.6	32.4	10	88	0.8
Belarus	207	47	..	30.0	..	0.7	..	69.3	74	–688	–1.0
Belgium[a]	33	..	23.2	22.0	0.4	0.5	76.4	75.8	7	0	0.0
Benin	111	240	12.2	12.9	4.0	4.1	83.8	83.0	46	596	1.2
Bolivia	1,084	147	1.7	1.8	0.2	0.2	98.1	97.9	483	5,814	1.2
Bosnia and Herzegovina	51	264	..	9.8	..	2.9	..	84.3	27	0	0.0
Botswana	567	161	0.7	0.6	*0.0*	*0.0*	*99.3*	*0.0*	139	708	0.5
Brazil	8,457	64	4.6	6.3	1.2	1.4	94.2	92.9	5,511	25,544	0.5
Bulgaria	111	62	34.6	38.0	3.2	1.8	62.2	61.8	32	–6	0.0
Burkina Faso	274	252	10.0	12.4	0.1	0.1	89.8	87.5	43	320	0.7
Burundi	26	753	35.8	30.0	10.1	12.9	54.0	56.8	3	14	0.4
Cambodia	177	217	11.3	21.1	0.4	0.6	88.3	78.4	98	1,638	1.6
Cameroon	465	124	12.7	12.8	2.2	2.3	85.1	84.9	196	1,292	0.6
Canada	9,221	15	4.9	4.9	0.0	0.0	95.0	95.1	2,446	–1,764	–0.1
Central African Republic	623	105	3.0	3.1	0.1	0.1	96.9	96.8	299	1,282	0.4
Chad	1,259	166	2.5	2.6	0.0	0.0	97.5	97.4	110	942	0.8
Chile	749	68	5.4	4.5	0.3	0.4	94.3	94.6	79	292	0.4
China[b]	9,326	675	10.4	13.3	0.4	1.2	89.3	85.7	1,333	866	0.1
Hong Kong, China	1	5,085	7.0	6.1	*1.0*	1.0	*92.0*	92.9	..	..	..
Colombia	1,039	549	3.6	1.9	1.4	2.4	95.0	95.7	530	2,622	0.5
Congo, Dem. Rep.	2,267	464	3.0	3.1	0.3	0.4	96.6	96.5	..	..	..
Congo, Rep.	342	796	0.4	0.4	0.1	0.1	99.6	99.5	195	416	0.2
Costa Rica	51	602	5.5	5.6	4.4	4.8	90.1	89.6	12	414	3.0
Côte d'Ivoire	318	268	6.1	9.1	7.2	13.5	86.6	78.9	55	308	0.6
Croatia	56	169	..	22.2	..	2.2	..	78.2	18	0	0.0
Cuba	110	70	23.9	34.3	6.4	6.8	69.7	58.9	18	236	1.2
Czech Republic	77	115	..	40.1	..	3.1	..	56.2	26	–2	0.0
Denmark	42	33	62.3	54.7	0.3	0.2	37.4	44.0	4	0	0.0
Dominican Republic	48	221	22.1	27.9	7.2	11.4	70.6	62.4	16	264	1.6
Ecuador	277	300	5.6	5.7	3.3	5.2	91.1	89.0	111	1,890	1.6
Egypt, Arab Rep.	995	1,167	2.3	2.8	0.2	0.5	97.5	96.7	0	0	0.0
El Salvador	21	498	27.0	30.7	8.0	10.5	65.0	59.9	1	38	3.3
Eritrea	101	689	..	4.4	..	0.8	..	94.9	3	0	0.0
Estonia	42	35	..	26.7	..	0.4	..	72.9	20	–196	–1.0
Ethiopia	1,000	434	..	11.3	..	0.7	..	88.9	136	624	0.5
Finland	305	76	8.4	8.1	..	..	..	0.0	200	166	0.1
France	550	80	31.8	33.2	2.5	2.1	65.7	64.7	150	–1,608	–1.1
Gabon	258	169	1.1	1.3	0.6	0.7	98.2	98.2	179	910	0.5
Gambia, The	10	460	15.9	17.5	..	..	..	0.0	1	8	0.9
Georgia	70	288	..	11.1	..	4.7	..	83.8	30	0	0.0
Germany	349	92	34.4	33.9	1.4	0.7	64.1	65.5	107	0	0.0
Ghana	228	398	8.4	12.3	7.5	7.5	84.2	80.2	90	1,172	1.3
Greece	129	148	22.5	22.2	7.9	8.4	69.6	69.1	65	–1,408	–2.3
Guatemala	108	458	11.7	12.6	4.4	5.1	83.9	82.4	38	824	2.0
Guinea	246	796	2.0	2.4	0.9	1.2	97.1	96.7	64	748	1.1
Guinea-Bissau	28	289	9.1	10.7	1.1	1.4	89.9	87.9	23	104	0.4
Haiti	28	885	19.8	20.3	12.5	12.7	67.7	67.0	0	8	3.4
Honduras	112	191	13.9	15.1	1.8	3.1	84.3	81.9	41	1,022	2.3

Land use and deforestation 3.1

	Land area	Rural population density	Land use						Forest area	Average annual deforestation	
			Arable land % of land area		Permanent cropland % of land area		Other % of land area				
	thousand sq. km	people per sq. km of arable land							thousand sq. km	sq. km	% change
	1996	1996	1980	1996	1980	1996	1980	1996	1995	1990–95	1990–95
Hungary	92	74	54.4	52.1	3.3	2.4	42.2	46.1	17	–88	–0.5
India	2,973	424	54.8	54.7	1.8	2.4	43.4	42.9	650	–72	0.0
Indonesia	1,812	699	9.9	9.9	4.4	7.2	85.6	83.3	1,098	10,844	1.0
Iran, Islamic Rep.	1,622	137	8.0	10.9	0.5	1.0	91.5	88.3	15	284	1.7
Iraq	437	97	12.0	12.6	0.4	0.6	87.6	86.8	1	0	0.0
Ireland	69	116	16.1	19.3	0.0	0.0	83.9	80.9	6	–140	–2.7
Israel	21	149	15.8	17.0	4.3	4.2	80.0	78.9	1	0	0.0
Italy	294	236	32.2	27.6	10.0	9.1	57.7	62.1	65	–58	–0.1
Jamaica	11	646	16.6	16.6	5.5	6.1	77.8	79.8	2	158	7.2
Japan	377	693	11.4	10.5	1.6	1.0	87.0	88.3	251	132	0.1
Jordan	89	378	3.4	3.6	0.4	1.0	96.2	95.4	0	12	2.5
Kazakhstan	2,671	20	..	11.9	..	0.1	..	86.9	105	–1,928	–1.9
Kenya	569	492	6.7	7.0	0.8	0.9	92.5	92.1	13	34	0.3
Korea, Dem. Rep.	120	511	13.4	14.1	2.4	2.5	84.2	83.4	62	0	0.0
Korea, Rep.	99	462	20.9	17.7	1.4	2.0	77.8	79.4	76	130	0.2
Kuwait	18	977	0.1	0.3	..	..	..	0.0	0	0	0.0
Kyrgyz Republic	192	310	..	4.7	..	2.7	..	92.6	7	0	0.0
Lao PDR	231	463	2.9	3.5	0.1	0.2	97.0	96.3	..	..	..
Latvia	62	40	..	27.3	..	0.5	..	72.0	29	–250	–0.9
Lebanon	10	264	20.5	18.2	8.9	12.5	70.6	70.0	1	52	7.8
Lesotho	30	463	9.6	10.5	..	..	..	0.0	0	0	0.0
Libya	1,760	40	1.0	1.0	0.2	0.2	98.8	98.8	4	0	0.0
Lithuania	65	35	..	45.5	..	0.9	..	53.4	20	–112	–0.6
Macedonia, FYR	25	129	..	23.9	..	1.9	..	74.0	10	2	0.0
Madagascar	582	391	4.3	4.4	0.9	0.9	94.8	94.7	151	1,300	0.8
Malawi	94	540	13.3	17.0	0.9	1.1	85.8	81.9	33	546	1.6
Malaysia	329	530	3.0	5.5	11.6	17.6	85.4	76.9	155	4,002	2.4
Mali	1,220	157	1.6	3.8	0.0	0.0	98.3	97.5	116	1,138	1.0
Mauritania	1,025	233	0.2	0.5	0.0	0.0	99.8	99.6	6	0	0.0
Mauritius	2	673	49.3	49.3	3.4	3.0	47.3	47.8	0	0	0.0
Mexico	1,909	97	12.1	13.2	0.8	1.1	87.1	87.0	554	5,080	0.9
Moldova	33	116	..	53.8	..	12.5	..	33.6	4	0	0.0
Mongolia	1,567	73	0.8	0.8	*0.0*	0.0	*99.2*	99.2	94	0	0.0
Morocco	446	145	16.6	19.7	1.1	1.9	82.3	78.2	38	118	0.3
Mozambique	784	357	3.6	3.8	0.3	0.3	96.1	95.9	169	1,162	0.7
Myanmar	658	336	14.6	14.5	0.7	0.9	84.8	84.7	272	3,874	1.4
Namibia	823	122	0.8	1.0	0.0	0.0	99.2	99.1	124	420	0.3
Nepal	143	668	16.0	20.4	0.2	0.4	83.8	80.8	48	548	1.1
Netherlands	34	192	23.3	26.1	0.9	1.0	75.8	72.9	3	0	0.0
New Zealand	268	33	9.3	5.8	3.7	6.4	86.9	88.5	79	–434	–0.6
Nicaragua	121	69	9.5	20.2	1.5	2.4	89.1	78.8	56	1,508	2.5
Niger	1,267	154	2.8	3.9	0.0	0.0	97.2	96.4	26	0	0.0
Nigeria	911	225	30.6	33.3	2.8	2.8	66.6	64.1	138	1,214	0.9
Norway	307	117	2.7	3.3	..	..	..	0.0	81	–180	–0.2
Oman	212	3,086	0.1	0.1	0.1	0.2	99.8	99.7	0	0	..
Pakistan	771	388	25.9	27.3	0.4	0.7	73.7	72.1	17	550	2.9
Panama	74	235	5.8	6.7	1.6	2.1	92.5	91.1	28	636	2.1
Papua New Guinea	453	6,140	0.0	0.1	0.9	1.1	99.0	98.8	369	1,332	0.4
Paraguay	397	106	4.1	5.5	0.3	0.2	95.6	94.3	115	3,266	2.6
Peru	1,280	186	2.5	2.9	0.3	0.4	97.2	96.8	676	2,168	0.3
Philippines	298	621	14.5	17.5	14.8	14.4	70.8	68.6	68	2,624	3.5
Poland	304	98	48.0	46.3	1.1	1.2	50.9	51.9	87	–120	–0.1
Portugal	92	295	26.5	23.5	7.8	8.2	65.7	67.7	29	–240	–0.9
Puerto Rico	9	4,526	5.6	2.5	5.6	4.4	88.7	91.3	3	24	0.9
Romania	230	106	42.7	40.5	2.9	2.4	54.4	56.9	62	12	0.0
Russian Federation	16,889	27	..	7.8	..	0.1	..	92.2	7,635	0	0.0

3.1 Land use and deforestation

	Land area	Rural population density	Land use						Forest area	Average annual deforestation	
			Arable land		Permanent cropland		Other				
	thousand sq. km	people per sq. km of arable land	% of land area		% of land area		% of land area		thousand sq. km	sq. km	% change
	1996	1996	1980	1996	1980	1996	1980	1996	1995	1990–95	1990–95
Rwanda	25	746	30.8	34.5	10.3	12.2	58.9	53.4	3	4	0.2
Saudi Arabia	2,150	87	0.9	1.7	0.0	0.1	99.1	98.2	2	18	0.8
Senegal	193	212	12.2	11.7	0.0	0.1	87.8	87.7	74	496	0.7
Sierra Leone	72	629	6.3	6.8	0.7	0.8	93.0	92.5	13	426	3.0
Singapore	1	0	3.3	1.6	9.8	*0.0*	86.9	*0.0*	0	0	0.0
Slovak Republic	48	147	..	30.8	..	2.7	..	66.5	20	–24	–0.1
Slovenia	20	418	..	11.5	..	2.7	..	85.8	11	0	0.0
South Africa	1,221	134	10.2	12.3	0.7	0.7	89.1	87.3	85	150	0.2
Spain	499	60	31.1	30.5	9.9	9.8	59.0	59.7	84	0	0.0
Sri Lanka	65	1,601	13.2	13.7	15.9	15.5	70.8	70.9	18	202	1.1
Sudan	2,376	142	5.2	5.4	0.0	0.0	94.8	94.5	416	3,526	0.8
Sweden	412	53	7.2	6.8	..	..	..	0.0	244	24	0.0
Switzerland	40	686	9.9	10.1	0.5	0.6	89.6	89.0	11	0	0.0
Syrian Arab Republic	184	153	28.5	24.4	2.5	3.9	69.1	70.1	2	52	2.2
Tajikistan	141	488	..	5.8	..	0.5	..	93.7	4	0	0.0
Tanzania	884	738	2.5	3.5	1.0	1.0	96.5	95.6	325	3,226	1.0
Thailand	511	280	32.3	33.4	3.5	6.6	64.2	60.0	116	3,294	2.6
Togo	54	141	36.8	38.1	6.6	6.6	56.6	55.9	12	186	1.4
Trinidad and Tobago	5	481	13.6	14.6	9.0	9.2	77.4	76.2	2	26	1.5
Tunisia	155	119	20.5	18.3	9.7	13.1	69.7	69.0	6	30	0.5
Turkey	770	76	32.9	31.8	4.1	3.2	63.0	63.9	89	0	0.0
Turkmenistan	470	176	..	3.1	..	0.1	..	96.9	38	0	0.0
Uganda	200	340	20.4	25.3	8.0	8.8	71.6	65.9	61	592	0.9
Ukraine	579	45	..	57.3	..	1.8	..	40.7	92	–54	–0.1
United Arab Emirates	84	1,108	0.2	0.4	0.1	0.5	99.7	99.0	1	0	0.0
United Kingdom	242	104	28.7	25.2	0.3	0.2	71.1	75.4	24	–128	–0.5
United States	9,159	36	20.6	19.1	0.2	0.2	79.2	80.2	2,125	–5,886	–0.3
Uruguay	175	24	8.0	7.2	0.3	0.3	91.7	92.5	8	4	0.0
Uzbekistan	414	301	..	10.9	..	0.9	..	88.2	91	–2,260	–2.7
Venezuela	882	117	3.2	3.0	0.9	1.0	95.9	95.9	440	5,034	1.1
Vietnam	325	1,102	18.2	16.9	1.9	3.8	79.8	79.2	91	1,352	1.4
West Bank and Gaza	..	..	..	..	..	..	..	0.0	..	..	..
Yemen, Rep.	528	714	2.6	2.7	0.2	0.2	97.2	97.1	0	0	0.0
Yugoslavia, FR (Serb./Mont.)	102	122	..	36.4	..	3.5	..	60.0	18	0	0.0
Zambia	743	99	6.9	7.1	0.0	0.0	93.1	92.9	314	2,644	0.8
Zimbabwe	387	246	6.4	8.0	0.3	0.3	93.4	92.6	87	500	0.6
World	130,148 s	510 w	10.1 w	10.6 w	0.9 w	1.0 w	88.7 w	88.3 w	32,712 s	101,724 s	0.3 w
Low income	30,175	487	11.9	12.3	0.9	1.1	86.6	86.8	4,924	37,622	0.7
Middle income	68,983	573	7.8	9.5	1.2	1.2	90.9	89.4	21,277	75,666	0.4
Lower middle income	46,158	619	8.6	10.2	1.2	1.2	90.2	88.7	13,499	33,358	0.2
Upper middle income	22,825	166	7.0	8.1	1.1	1.3	91.7	90.7	7,778	42,308	0.5
Low & middle income	99,158	530	9.4	10.3	1.1	1.1	89.3	88.6	26,201	113,288	0.4
East Asia & Pacific	15,869	683	10.0	11.9	1.6	2.6	87.4	85.7	3,756	29,826	0.8
Europe & Central Asia	23,844	115	38.6	12.1	..	0.4	..	87.3	8,579	–5,798	–0.1
Latin America & Carib.	20,064	252	5.8	6.8	1.1	1.3	93.1	92.3	9,064	57,766	0.6
Middle East & N. Africa	10,972	501	4.4	5.2	0.4	0.7	95.1	94.1	89	800	0.9
South Asia	4,781	523	42.5	42.6	1.5	1.9	56.1	55.5	744	1,316	0.2
Sub-Saharan Africa	23,628	364	5.4	6.4	0.7	0.9	93.7	92.8	3,969	29,378	0.7
High income	30,990	215	12.0	11.6	..	..	..	..	6,512	–11,564	–0.2
Europe EMU	2,275	152	27.7	27.1	5.4	5.0	63.9	64.8	683	–1,880	–0.3

a. Includes Luxembourg. b. Includes Taiwan, China.

Land use and deforestation 3.1

About the data

The data in the table show that land use patterns are changing. They also indicate major differences in resource endowments and uses among countries. True comparability is limited, however, by variations in definitions, statistical methods, and the quality of data collection. For example, countries use different definitions of land use. The Food and Agriculture Organization (FAO), the primary compiler of these data, occasionally adjusts its definitions of land use categories and sometimes revises earlier data. (In 1985, for example, the FAO began to exclude from cropland land used for shifting cultivation but currently lying fallow.) And following FAO practice, *World Development Indicators 1999* breaks down the category *cropland*, used in last year's edition, into *arable land* and *permanent cropland*. Because the data reflect changes in data reporting procedures as well as actual changes in land use, apparent trends should be interpreted with caution.

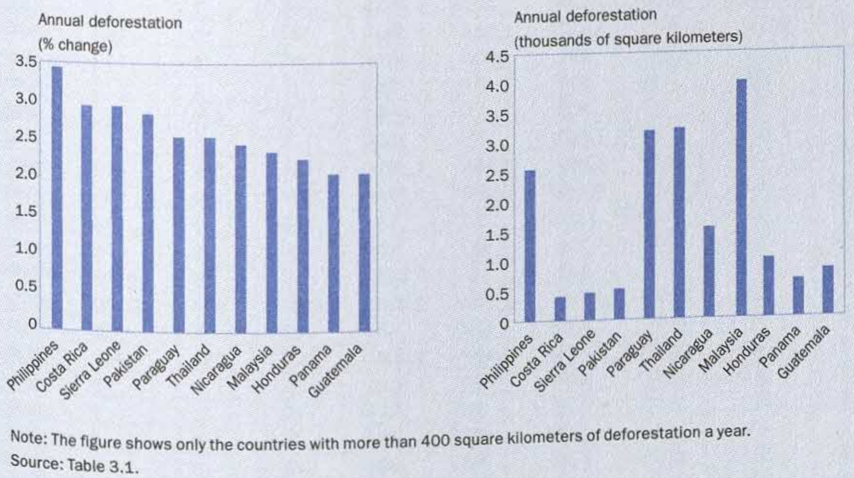
Satellite images show land use that differs from that given by ground-based measures in both area under cultivation and type of land use. Furthermore, land use data in countries such as India are based on reporting systems that were geared to the collection of tax revenue. Because taxes on land are no longer a major source of government revenue, the quality and coverage of land use data (except for cropland) have declined. Data on forest area may be particularly unreliable because of differences in definitions and irregular surveys.

Estimates of forest area are from the FAO's *State of the World's Forests 1997*, which provides information on forest cover as of 1995 and a revised estimate of forest cover in 1990. Forest cover data for developing countries are based on country assessments that were prepared at different times and that, for reporting purposes, had to be adapted to the standard reference years of 1990 and 1995. This adjustment was made with a deforestation model designed to correlate forest cover change over time with ancillary variables, including population change and density, initial forest cover, and ecological zone of the forest area under consideration. Although the same model was used to estimate forest cover for the 1990 forest assessment, the inputs to *State of the World's Forests 1997* had more recent and accurate information on boundaries of ecological zones and, in some countries, new national forest cover assessments. Specifically, for the calculation of forest cover for 1995 and the recalculation of the 1990 estimates, new forest inventory information was used for Bolivia, Brazil, Cambodia, Côte d'Ivoire, Guinea-Bissau, Mexico, Papua New Guinea, the Philippines, and Sierra Leone. The new information on global totals raised estimates of forest cover. For industrial countries, the United Nations Economic Commission for Europe and the FAO use a detailed questionnaire to survey the forest cover in each country.

No breakdown of forest cover between natural forest and plantation is shown in the table because of space limitations. (This breakdown is provided by the FAO only for developing countries.) For this reason the deforestation data in the table may underestimate the rate at which natural forest is disappearing in some countries.

Figure 3.1

The countries with the highest deforestation rates in 1990–95

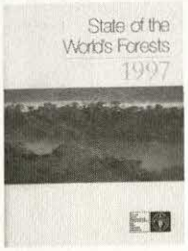


Note: The figure shows only the countries with more than 400 square kilometers of deforestation a year.
Source: Table 3.1.

Definitions

- **Land area** is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes. (See table 1.1 for the total area of countries.) • **Rural population density** is the rural population divided by the arable land area. Rural population is the difference between the total surface area population and the urban population (see *Definitions* for tables 2.1 and 3.10). • **Land use** is broken into three categories. **Arable land** includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded. **Permanent cropland** is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber; this category includes land under flowering shrubs, fruit trees, nut trees, and vines, but excludes land under trees grown for wood or timber. **Other land** includes forest and woodland as well as logged-over areas to be forested in the near future. Also included are uncultivated land, grassland not used for pasture, wetlands, wastelands, and built-up areas—residential, recreational, and industrial lands and areas covered by roads and other fabricated infrastructure.
- **Forest area** is land under natural or planted stands of trees, whether productive or not (see *About the data*).
- **Average annual deforestation** refers to the permanent conversion of natural forest area to other uses, including shifting cultivation, permanent agriculture, ranching, settlements, and infrastructure development. Deforested areas do not include areas logged but intended for regeneration or areas degraded by fuelwood gathering, acid precipitation, or forest fires. Negative numbers indicate an increase in forest area.

Data sources



Data on land area and land use are from the FAO's electronic files and are published in its *Production Yearbook*. The FAO gathers these data from national agencies through annual questionnaires and by analyzing the results of national agricultural censuses. Forestry data are from the FAO's *State of the World's Forests 1997*.

3.2 Agricultural inputs

	Arable land		Irrigated land		Land under cereal production		Fertilizer consumption		Agricultural machinery			
	hectares per capita		% of cropland		thousand hectares		hundreds of grams per hectare of arable land		Tractors per thousand agricultural workers		Tractors per hundred hectares of arable land	
	1979–81	1994–96	1979–81	1994–96	1979–81	1995–97	1979–81	1995–97	1979–81	1994–96	1979–81	1994–96
Albania	0.22	0.18	53.0	48.4	367	227	1,556	207	15	10	173	150
Algeria	0.37	0.27	3.4	6.9	2,968	2,453	277	100	27	43	68	125
Angola	0.41	0.27	2.2	2.1	705	789	49	33	4	3	35	34
Argentina	0.89	0.71	5.8	6.3	11,099	10,126	46	254	132	190	73	112
Armenia	..	0.16	..	43.7	..	181	..	130	..	64	..	306
Australia	2.97	2.70	3.5	4.8	15,986	15,854	269	376	751	698	75	65
Austria	0.20	0.18	0.2	0.3	1,062	829	2,615	1,704	945	1,492	2,084	2,481
Azerbaijan	..	0.21	..	50.0	..	617	..	244	..	31	..	181
Bangladesh	0.10	0.07	17.1	39.1	10,823	10,825	459	1,374	0	0	5	6
Belarus	..	0.60	..	1.9	..	2,508	..	969	..	131	..	184
Belgium[a]	..	..	0.1	0.1	426	334	5,323	4,245	917	1,130	1,416	1,465
Benin	0.39	0.26	0.3	0.5	525	718	12	214	0	0	1	1
Bolivia	0.35	0.27	6.6	3.7	559	726	23	41	4	4	21	27
Bosnia and Herzegovina	..	0.21	..	0.3	..	227	..	210	..	228	..	548
Botswana	0.44	0.23	0.5	0.3	153	178	33	62	9	21	54	163
Brazil	0.32	0.33	3.3	4.9	20,612	19,554	915	898	31	51	139	142
Bulgaria	0.43	0.49	28.3	18.7	2,110	1,975	2,334	459	66	61	161	64
Burkina Faso	0.39	0.34	0.4	0.7	2,026	2,998	26	70	0	0	0	5
Burundi	0.22	0.12	0.7	1.3	203	206	11	61	0	0	1	2
Cambodia	0.30	0.37	4.9	4.5	1,241	1,950	45	30	0	0	6	3
Cameroon	0.68	0.45	0.2	0.3	1,021	935	56	53	0	0	1	1
Canada	1.86	1.52	1.3	1.6	19,561	19,330	416	545	824	1,683	144	163
Central African Republic	0.81	0.58	..	..	194	140	5	6	0	0	1	1
Chad	0.70	0.48	0.2	0.4	907	1,523	6	27	0	0	1	1
Chile	0.36	0.24	29.6	32.6	820	621	321	1,131	43	44	86	119
China	0.10	0.10	45.1	37.0	94,647	91,370	1,494	2,732	2	1	76	56
Hong Kong, China	0.00	0.00	43.8	28.6	0	0	..	..	0	0	10	7
Colombia	0.13	0.05	7.7	23.4	1,361	1,239	812	2,853	8	7	77	118
Congo, Dem. Rep.	0.25	0.16	0.1	0.1	1,115	2,063	11	16	0	0	3	4
Congo, Rep.	0.07	0.05	0.7	0.6	19	26	30	170	2	1	55	52
Costa Rica	0.12	0.08	12.1	23.8	136	70	2,650	3,636	22	23	210	246
Côte d'Ivoire	0.24	0.21	1.0	1.0	1,008	1,556	261	229	1	1	16	13
Croatia	..	0.25	..	0.2	..	626	..	1,577	..	14	..	31
Cuba	0.27	0.34	22.9	20.2	224	182	2,024	546	78	94	259	207
Czech Republic	..	0.30	..	0.7	..	1,618	..	1,122	..	148	..	252
Denmark	0.52	0.44	14.5	20.3	1,818	1,522	2,453	1,914	973	1,088	708	624
Dominican Republic	0.19	0.17	11.7	13.7	149	140	572	722	3	3	20	18
Ecuador	0.20	0.14	19.4	8.1	419	1,038	471	752	6	7	40	56
Egypt, Arab Rep.	0.06	0.05	100.0	100.0	2,007	2,632	2,864	3,750	4	10	158	304
El Salvador	0.12	0.11	14.8	14.2	422	431	1,330	1,261	5	5	59	54
Eritrea	..	0.12	..	5.4	..	292	..	78	..	1	..	19
Estonia	..	0.76	..	..	..	305	..	268	..	475	..	440
Ethiopia	..	0.20	..	1.6	..	7,790	..	126	..	0	..	3
Finland	0.54	0.49	..	..	1,190	1,059	1,868	1,397	721	1,301	824	911
France	0.32	0.31	4.6	8.2	9,804	8,780	3,260	2,679	737	1,189	836	721
Gabon	0.42	0.29	0.9	0.8	6	18	20	13	5	7	43	48
Gambia, The	0.26	0.16	..	..	54	99	132	49	0	0	3	3
Georgia	..	0.14	..	42.2	..	346	..	422	..	28	..	219
Germany	0.15	0.14	3.7	3.9	7,692	6,753	4,249	2,410	624	954	1,340	1,041
Ghana	0.18	0.16	0.2	0.1	902	1,291	104	44	1	1	18	15
Greece	0.30	0.27	24.2	33.8	1,600	1,306	1,927	1,895	120	267	485	805
Guatemala	0.19	0.13	5.0	6.5	716	629	726	1,324	3	2	32	32
Guinea	0.11	0.09	12.8	10.9	708	692	23	47	0	0	3	9
Guinea-Bissau	0.32	0.27	6.0	5.0	142	133	24	43	0	0	1	1
Haiti	0.10	0.08	7.9	9.7	416	418	62	89	0	0	3	4
Honduras	0.44	0.30	4.1	3.6	421	492	163	380	5	7	21	29

Agricultural inputs 3.2

	Arable land		**Irrigated land**		**Land under cereal production**		**Fertilizer consumption**		**Agricultural machinery**			
	hectares per capita		% of cropland		thousand hectares		hundreds of grams per hectare of arable land		Tractors per thousand agricultural workers		Tractors per hundred hectares of arable land	
	1979–81	**1994–96**	**1979–81**	**1994–96**	**1979–81**	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1994–96**	**1979–81**	**1994–96**
Hungary	0.47	0.47	3.6	4.2	2,878	2,840	2,906	836	59	54	111	68
India	0.24	0.17	22.8	32.0	104,349	100,140	345	856	2	5	24	82
Indonesia	0.12	0.09	16.2	15.0	11,825	14,942	645	1,468	0	1	5	34
Iran, Islamic Rep.	0.36	0.30	35.5	38.0	8,062	8,921	430	600	17	39	57	133
Iraq	0.40	0.26	32.1	61.0	2,159	3,090	172	637	23	54	44	67
Ireland	0.33	0.37	..	..	425	289	5,373	5,514	606	978	1,289	1,265
Israel	0.08	0.06	49.3	45.3	129	86	2,384	2,963	294	336	809	731
Italy	0.17	0.14	19.3	24.9	5,082	4,210	2,295	2,280	370	867	1,117	1,797
Jamaica	0.08	0.07	13.6	14.0	4	3	923	1,547	9	11	156	181
Japan	0.04	0.03	62.6	62.7	2,724	2,257	4,687	4,168	209	593	3,091	5,359
Jordan	0.14	0.08	11.0	18.2	158	109	404	544	48	42	153	206
Kazakhstan	..	1.99	..	6.9	..	17,158	..	34	..	106	..	51
Kenya	0.23	0.15	0.9	1.5	1,692	1,805	160	278	1	1	17	35
Korea, Dem. Rep.	0.09	0.08	58.9	73.0	1,625	1,410	4,688	2,418	13	19	275	441
Korea, Rep.	0.05	0.04	59.6	60.7	1,689	1,174	3,920	5,291	1	34	14	563
Kuwait	0.00	0.00	..	..	0	0	4,500	2,000	3	14	220	200
Kyrgyz Republic	..	0.19	..	76.8	..	596	..	295	..	44	..	238
Lao PDR	0.21	0.17	15.4	20.3	751	597	40	58	0	0	8	11
Latvia	..	0.68	..	..	..	445	..	655	..	284	..	316
Lebanon	0.07	0.05	28.3	28.4	34	39	1,663	2,507	28	77	141	219
Lesotho	0.22	0.16	..	..	203	178	150	207	6	6	47	61
Libya	0.58	0.36	10.7	22.2	538	466	357	449	101	275	134	187
Lithuania	..	0.79	..	..	..	1,101	..	410	..	239	..	236
Macedonia, FYR	..	0.31	..	9.4	..	228	..	751	..	323	..	877
Madagascar	0.28	0.19	21.5	35.0	1,309	1,350	31	48	1	1	11	13
Malawi	0.20	0.16	1.3	1.6	1,155	1,391	246	213	0	0	10	9
Malaysia	0.07	0.09	6.7	4.5	729	696	4,273	6,375	4	23	77	230
Mali	0.31	0.40	2.9	2.3	1,346	2,538	61	79	0	1	5	7
Mauritania	0.14	0.20	22.8	10.3	125	253	57	93	1	1	13	7
Mauritius	0.10	0.09	15.0	17.0	0	0	2,547	3,174	4	6	33	37
Mexico	0.34	0.28	20.3	23.1	9,547	10,923	570	538	16	20	54	71
Moldova	..	0.41	..	14.1	..	900	..	652	..	82	..	281
Mongolia	0.71	0.53	3.0	6.1	559	304	83	19	32	22	82	56
Morocco	0.38	0.33	15.2	13.0	4,414	4,967	273	331	7	10	35	48
Mozambique	0.24	0.18	2.1	3.4	1,077	1,756	109	31	1	1	20	19
Myanmar	0.28	0.22	10.4	15.9	5,133	6,303	111	163	1	1	9	10
Namibia	0.64	0.52	0.6	0.8	195	332	..	..	10	11	39	40
Nepal	0.16	0.14	22.5	30.6	2,251	3,249	98	336	0	0	10	16
Netherlands	0.06	0.06	58.5	61.5	225	198	8,620	5,923	561	646	2,238	2,060
New Zealand	0.80	0.43	5.2	8.9	193	167	1,965	4,247	619	451	367	488
Nicaragua	0.39	0.55	6.0	3.3	266	383	392	147	6	7	19	11
Niger	0.62	0.54	0.7	1.4	3,872	6,860	10	19	0	0	0	0
Nigeria	0.39	0.27	0.7	0.7	6,048	18,139	59	68	1	1	3	4
Norway	0.20	0.23	..	..	311	336	3,146	2,138	824	1,251	1,603	1,539
Oman	0.01	0.01	92.7	98.4	2	3	840	7,083	1	1	76	94
Pakistan	0.24	0.17	72.7	80.2	10,693	12,285	525	1,115	5	12	50	144
Panama	0.22	0.19	5.0	4.9	166	169	692	720	27	20	122	100
Papua New Guinea	0.01	0.01	..	..	2	2	3,827	2,311	1	1	699	203
Paraguay	0.52	0.45	3.40	3.0	304	596	44	120	14	25	45	75
Peru	0.19	0.16	32.8	41.8	732	874	381	453	5	3	37	25
Philippines	0.09	0.07	14.0	16.7	6,790	6,608	765	1,193	1	1	24	22
Poland	0.41	0.37	0.7	0.7	7,875	8,730	2,393	1,074	112	277	425	923
Portugal	0.25	0.22	20.1	21.7	1,099	706	1,113	1,198	72	203	351	692
Puerto Rico	0.02	0.01	39.0	57.8	1	0	..	..	..	..	..	..
Romania	0.44	0.41	21.9	31.4	6,340	6,202	1,448	483	39	80	150	175
Russian Federation	..	0.89	..	4.0	..	52,759	..	129	..	122	..	88

Agricultural inputs

	Arable land		Irrigated land		Land under cereal production		Fertilizer consumption		Agricultural machinery			
									Tractors per thousand agricultural workers		Tractors per hundred hectares of arable land	
	hectares per capita		% of cropland		thousand hectares		hundreds of grams per hectare of arable land					
	1979–81	1994–96	1979–81	1994–96	1979–81	1995–97	1979–81	1995–97	1979–81	1994–96	1979–81	1994–96
Rwanda	0.15	0.13	0.4	0.3	239	140	3	1	0	0	1	1
Saudi Arabia	0.20	0.19	28.9	38.7	388	621	228	873	2	11	10	26
Senegal	0.42	0.27	2.6	3.1	1,216	1,204	104	74	0	0	2	2
Sierra Leone	0.14	0.11	4.1	5.4	434	361	58	62	0	1	6	11
Singapore	0.00	0.00	..	..	..	..	22,333	50,940	3	16	220	650
Slovak Republic	..	0.28	..	13.4	..	851	..	660	..	100	..	199
Slovenia	..	0.12	..	0.7	..	99	..	3,116	..	2,762	..	3,800
South Africa	0.45	0.38	8.4	8.1	6,645	6,176	874	511	90	69	140	87
Spain	0.42	0.39	14.8	17.7	7,391	6,788	1,012	1,285	200	513	335	525
Sri Lanka	0.06	0.05	28.3	29.2	864	775	1,789	2,324	8	9	276	356
Sudan	0.66	0.48	14.5	15.0	4,447	8,377	51	52	2	2	8	8
Sweden	0.36	0.32	..	..	1,505	1,186	1,654	1,121	715	931	623	592
Switzerland	0.06	0.06	6.2	5.9	172	195	4,623	3,058	494	616	2,428	2,815
Syrian Arab Republic	0.60	0.32	9.6	20.4	2,642	3,449	250	761	29	65	54	178
Tajikistan	..	0.14	..	80.6	..	353	..	850	..	37	..	366
Tanzania	0.12	0.10	3.8	4.6	2,835	3,171	143	113	1	1	45	23
Thailand	0.35	0.29	16.4	23.2	10,625	11,215	177	873	1	7	11	82
Togo	0.76	0.50	0.3	0.3	416	771	13	73	0	0	1	2
Trinidad and Tobago	0.06	0.06	17.8	18.0	4	4	1,064	1,022	50	49	337	353
Tunisia	0.51	0.32	4.9	7.5	1,416	1,223	212	312	30	39	79	121
Turkey	0.57	0.40	9.6	15.4	13,499	13,958	529	678	38	57	169	318
Turkmenistan	..	0.32	..	87.8	..	390	..	919	..	83	..	347
Uganda	0.32	0.26	0.1	0.1	752	1,315	1	6	0	1	6	9
Ukraine	..	0.65	..	7.5	..	12,789	..	277	..	92	..	123
United Arab Emirates	0.01	0.01	..	89.9	0	1	2,250	9,672	6	4	106	68
United Kingdom	0.12	0.10	2.0	1.8	3,930	3,346	3,185	3,700	726	871	742	837
United States	0.83	0.67	10.8	12.0	72,630	63,137	1,092	1,134	1,230	1,452	253	271
Uruguay	0.48	0.39	5.4	10.7	614	628	564	777	171	172	236	262
Uzbekistan	..	0.20	..	81.6	..	1,729	..	1,089	..	59	..	376
Venezuela	0.19	0.12	3.6	5.2	814	772	711	1,024	50	58	133	182
Vietnam	0.11	0.07	24.1	29.6	5,964	7,568	302	2,593	1	4	38	172
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	0.16	0.09	19.9	31.3	865	719	93	85	3	2	33	41
Yugoslavia, FR (Serb./Mont.)	..	0.35	..	1.6	..	..	..	437	..	..	..	..
Zambia	0.89	0.58	0.4	0.9	595	748	145	96	3	2	9	11
Zimbabwe	0.36	0.28	3.1	4.6	1,633	2,025	609	554	7,139	7,074	66	81
World	**0.27 w**	**0.24 w**	**16.6 w**	**17.4 w**	**588,188 s**	**702,410 s**	**867 w**	**941 w**	**19 w**	**20 w**	**172 w**	**187 w**
Low income	0.25	0.19	18.4	23.5	187,031	225,820	753	1,105	2	4	20	58
Middle income	0.19	0.23	..	17.2	244,882	336,911	1,542	1,463	7	11	100	124
Lower middle income	0.14	0.21	..	20.2	168,621	257,156	1,958	1,599	4	6	69	91
Upper middle income	0.39	0.33	8.3	10.0	76,261	79,755	972	1,117	43	73	144	210
Low & middle income	0.22	0.21	19.7	19.4	431,913	562,731	1,170	1,332	5	8	62	100
East Asia & Pacific	0.12	0.11	..	..	139,907	142,975	2,444	3,076	2	2	55	61
Europe & Central Asia	..	0.61	..	9.7	37,380	129,657	..	810	67	103	223	172
Latin America & Carib.	0.33	0.28	9.8	11.2	49,979	50,234	786	931	25	34	95	112
Middle East & N. Africa	0.29	0.21	23.6	31.1	25,657	28,696	605	992	12	24	61	118
South Asia	0.23	0.16	27.8	37.2	132,128	130,003	918	1,370	2	5	26	83
Sub-Saharan Africa	0.36	0.26	3.6	3.8	46,864	81,166	419	576	3	2	23	18
High income	0.46	0.40	..	..	156,274	139,679	..	..	429	756	383	436
Europe EMU	0.24	0.22	..	..	33,970	29,611	1,949	2,343	451	812	888	953

a. Includes Luxembourg.

Agricultural inputs 3.2

About the data

Agricultural activities provide developing countries with food and revenue, but they also can degrade natural resources. Poor farming practices can cause soil erosion and loss of fertility. Efforts to increase productivity through the use of chemical fertilizers, pesticides, and intensive irrigation methods have environmental costs and health impacts. Excessive use of chemical fertilizers can alter the chemistry of soil. Pesticide poisoning is common in developing countries. And salinization of irrigated land diminishes soil fertility. Thus appropriate use of inputs for agricultural production has far-reaching effects.

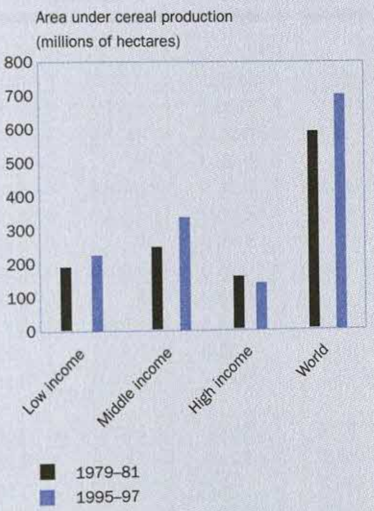
This table provides indicators of major inputs to agricultural production: land, fertilizers, and agricultural machinery. There is no single correct mix of inputs; appropriate levels and application rates vary by country and over time, depending on the type of crops, the climate and soils, and the production process used. The data shown here and in table 3.3 are collected by the Food and Agriculture Organization (FAO) through annual questionnaires. The FAO tries to impose standard definitions and reporting methods, but exact consistency across countries and over time is not possible. Data on agricultural employment in particular should be used with caution. In many countries much agricultural employment is informal and unrecorded, including substantial work performed by women and children.

Fertilizer consumption measures the quantity of plant nutrients in the form of nitrogen, potassium, and phosphorous compounds available for direct application. Consumption is calculated as production plus imports minus exports. Traditional nutrients—animal and plant manures—are not included. Because some chemical compounds used for fertilizers have other industrial applications, the consumption data may overstate the quantity available for crops.

To smooth annual fluctuations in agricultural activity, the indicators in the table have been averaged over three years.

Figure 3.2

The world is growing more cereal



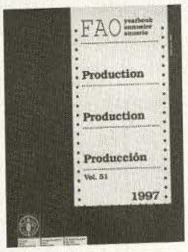
Source: Table 3.2.

In the past 17 years the area under cereal production has grown about 20 percent worldwide. Although the area of production has declined in high-income economies, cereal yield in these economies has increased more than 40 percent.

Definitions

- **Arable land** includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded. • **Irrigated land** refers to areas purposely provided with water, including land irrigated by controlled flooding. Cropland refers to arable land and land used for permanent crops (see table 3.1). • **Land under cereal production** refers to harvested areas, although some countries report only sown or cultivated areas.
- **Fertilizer consumption** measures the quantity of plant nutrients used per unit of arable land. Fertilizer products cover nitrogenous, potash, and phosphate fertilizers (including ground rock phosphate). The crop year (July through June) is the time reference for fertilizer consumption. • **Agricultural machinery** refers to wheel and crawler tractors (excluding garden tractors) in use in agriculture at the end of the calendar year specified or during the first quarter of the following year.

Data sources



The data in the table are from electronic files that the FAO makes available to the World Bank. Data on arable land, irrigated land, and land under cereal production are published in the FAO's *Production Yearbook.*

3.3 Agricultural output and productivity

	Crop production index		Food production index		Livestock production index		Cereal yield		Agricultural productivity	
	1989–91 = 100		1989–91 = 100		1989–91 = 100		kilograms per hectare		Agriculture value added per worker 1995 $	
	1979–81	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1995–97**
Albania	..	..	..	..	..	..	2,500	2,662	1,193	1,717
Algeria	78.4	119.1	69.7	118.2	52.0	109.2	656	982	1,411	1,903
Angola	102.0	147.0	91.9	130.1	87.8	106.4	526	542	..	117
Argentina	83.9	133.2	94.9	121.9	107.0	106.1	2,183	2,957	12,195	13,833
Armenia	..	114.4	..	82.3	..	62.4	..	1,678	..	4,477
Australia	79.9	141.2	91.5	126.9	85.5	103.5	1,321	1,957	20,880	29,044
Austria	92.8	93.0	92.3	100.0	94.5	105.4	4,131	5,605	9,761	15,474
Azerbaijan	..	54.5	..	55.6	..	65.0	..	1,571	..	847
Bangladesh	80.0	101.7	79.2	106.0	81.3	132.3	1,938	2,679	181	221
Belarus	..	101.2	..	58.9	..	56.0	..	2,162	..	3,461
Belgium[a]	84.9	122.3	88.4	114.4	88.8	113.6	4,861	7,566	..	..
Benin	54.1	156.0	63.4	129.5	68.9	113.9	698	1,067	302	504
Bolivia	71.3	137.5	71.0	126.7	75.6	114.8	1,183	1,664	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	2,622	..	..
Botswana	89.6	88.4	87.6	104.2	87.5	106.8	203	290	619	647
Brazil	75.3	115.9	69.5	122.2	67.9	126.9	1,496	2,442	2,047	3,931
Bulgaria	107.7	70.0	105.3	68.3	96.3	59.4	3,853	2,687	2,754	4,351
Burkina Faso	59.2	122.2	62.6	122.4	59.9	120.2	575	754	134	159
Burundi	79.9	94.7	80.5	96.4	88.1	93.4	1,081	1,378	177	139
Cambodia	55.2	126.3	51.1	124.8	32.3	121.2	1,025	1,759	..	407
Cameroon	91.1	119.8	83.2	118.7	61.3	107.9	849	1,313	834	958
Canada	77.6	115.2	79.9	112.7	88.3	115.0	2,173	2,712	..	..
Central African Republic	103.2	121.4	79.9	122.7	49.0	123.5	529	971	396	439
Chad	66.8	123.4	90.6	117.5	120.4	108.7	587	627	155	212
Chile	70.7	123.5	71.5	128.7	75.8	136.3	2,124	4,412	2,612	5,211
China	67.1	132.3	61.0	155.8	45.3	202.6	3,027	4,808	162	296
Hong Kong, China	133.6	77.1	97.4	56.7	188.7	45.3	1,712	..	..	..
Colombia	84.3	101.3	76.0	110.8	72.7	117.2	2,452	2,734	1,926	2,890
Congo, Dem. Rep.	72.2	103.4	71.9	104.9	77.3	104.6	807	780	270	285
Congo, Rep.	82.5	113.8	80.3	114.5	80.0	116.9	825	818	391	470
Costa Rica	70.6	127.8	73.0	128.4	77.2	120.6	2,498	3,179	3,159	4,627
Côte d'Ivoire	73.9	110.7	70.9	119.2	74.7	119.7	867	1,100	1,074	1,005
Croatia	..	80.2	..	57.7	..	46.2	..	4,632	..	*7,144*
Cuba	87.3	58.5	90.0	62.8	90.9	66.5	2,458	2,126	..	..
Czech Republic	..	86.4	..	81.9	..	77.8	..	4,172	..	..
Denmark	65.2	92.8	83.2	102.5	95.0	110.5	4,040	6,081	21,321	*46,621*
Dominican Republic	96.3	92.2	85.1	109.1	68.8	133.9	3,024	3,933	1,839	2,454
Ecuador	78.2	134.0	76.6	136.9	73.1	140.5	1,633	1,821	1,206	1,764
Egypt, Arab Rep.	75.7	129.4	68.4	129.8	67.0	122.2	4,053	6,357	721	1,163
El Salvador	120.3	104.0	90.8	109.5	88.9	123.4	1,702	1,949	2,013	1,705
Eritrea	..	119.3	..	102.3	..	91.3	..	465	..	..
Estonia	..	69.2	..	49.3	..	43.1	..	1,964	..	3,342
Ethiopia	91.8	..	90.2	..	89.1	..	..	1,229	..	..
Finland	74.9	95.1	92.8	92.4	107.1	91.6	2,511	3,412	16,995	28,296
France	87.6	104.8	93.7	103.6	97.8	105.0	4,700	6,809	14,956	34,760
Gabon	76.4	107.0	79.2	105.2	86.4	107.5	1,718	1,754	1,822	1,809
Gambia, The	79.4	77.4	82.6	81.6	93.3	108.9	1,284	1,035	325	216
Georgia	..	63.3	..	74.6	..	80.9	..	1,789	..	1,838
Germany	89.6	105.6	91.0	90.9	98.4	84.8	4,166	6,289	..	19,930
Ghana	72.4	158.2	73.5	147.7	79.7	102.8	807	1,383	663	533
Greece	86.8	102.6	91.2	98.4	99.9	98.7	3,090	3,636	8,804	*12,611*
Guatemala	89.6	107.9	69.9	114.0	76.7	117.6	1,578	1,869	2,110	1,902
Guinea	89.8	127.0	96.5	129.2	116.4	129.5	958	1,251	..	262
Guinea-Bissau	65.8	111.2	69.2	111.3	78.4	111.6	711	1,422	221	326
Haiti	103.4	84.2	105.5	90.5	112.1	113.7	1,009	923	578	407
Honduras	90.3	111.0	88.2	104.7	81.0	112.5	1,170	1,567	697	1,018

Agricultural output and productivity 3.3

	Crop production index		Food production index		Livestock production index		Cereal yield		Agricultural productivity	
	1989–91 = 100		1989–91 = 100		1989–91 = 100		kilograms per hectare		Agriculture value added per worker 1995 $	
	1979–81	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1995–97**	**1979–81**	**1995–97**
Hungary	93.4	79.0	91.0	76.8	94.2	72.3	4,519	4,305	3,389	4,655
India	71.0	116.5	68.4	117.1	62.5	122.8	1,324	2,189	253	343
Indonesia	66.6	120.0	63.5	122.4	50.3	137.1	2,837	3,950	610	745
Iran, Islamic Rep.	57.6	135.5	60.9	136.8	68.2	132.7	1,108	1,841	2,533	*3,831*
Iraq	74.2	104.7	77.7	92.8	81.8	56.3	832	833	..	..
Ireland	93.9	109.2	83.3	106.2	83.3	106.0	4,733	6,787	..	..
Israel	98.2	109.5	85.7	114.1	78.7	114.2	1,840	2,159	..	..
Italy	106.1	98.1	101.5	99.7	93.1	102.9	3,548	4,773	9,994	19,001
Jamaica	98.6	132.9	86.0	117.9	73.9	98.9	1,667	1,267	892	1,294
Japan	108.4	94.0	94.2	96.9	85.1	96.5	5,252	6,074	15,698	28,665
Jordan	52.1	159.7	55.3	157.3	51.4	162.1	521	1,059	1,447	1,634
Kazakhstan	..	56.6	..	68.5	..	63.8	..	650	..	1,477
Kenya	74.8	109.8	67.7	102.9	60.1	99.2	1,364	1,634	262	230
Korea, Dem. Rep.	..	..	..	..	..	..	3,405	2,965	..	..
Korea, Rep.	87.6	107.0	77.9	119.1	52.6	146.3	4,986	6,333	3,957	10,962
Kuwait	41.4	101.6	98.9	139.3	108.8	148.5	3,124	4,988	..	..
Kyrgyz Republic	..	87.2	..	123.8	..	92.0	..	2,373	..	2,917
Lao PDR	72.9	107.9	71.2	112.4	64.4	127.7	1,402	2,620	..	526
Latvia	..	75.6	..	49.8	..	41.2	..	1,992	..	3,125
Lebanon	52.0	114.4	57.8	117.6	87.6	132.1	1,307	2,494	..	..
Lesotho	95.1	102.6	89.4	104.4	87.7	114.2	977	976	498	319
Libya	77.6	88.2	81.7	97.4	68.9	97.1	430	686	..	..
Lithuania	..	91.3	..	69.8	..	58.7	..	2,214	..	2,907
Macedonia, FYR	..	94.4	..	95.9	..	96.7	..	2,719	..	1,528
Madagascar	83.0	102.7	82.1	105.3	89.6	105.5	1,664	1,992	198	180
Malawi	84.1	114.0	91.2	105.3	79.2	100.0	1,161	1,216	100	122
Malaysia	74.7	109.0	55.4	124.0	41.4	141.2	2,828	2,988	3,279	6,267
Mali	59.4	131.1	79.7	118.7	94.6	116.4	804	909	225	241
Mauritania	59.8	134.6	86.1	103.2	89.4	99.0	384	744	301	439
Mauritius	92.4	97.3	89.1	106.1	65.9	137.4	2,536	4,664	3,087	5,400
Mexico	87.9	113.1	84.9	120.6	84.8	124.1	2,152	2,575	1,482	1,690
Moldova	..	75.2	..	58.3	..	46.3	..	2,887	..	1,473
Mongolia	44.6	31.9	88.2	81.6	93.1	86.6	573	795	*727*	1,085
Morocco	54.8	91.6	55.9	94.9	59.8	100.8	811	990	1,117	1,593
Mozambique	109.4	126.1	99.2	119.5	82.6	96.1	603	765	..	76
Myanmar	89.0	135.7	87.8	133.5	86.2	122.9	2,521	2,916	..	..
Namibia	80.6	104.8	107.4	118.8	115.9	121.1	377	311	876	1,235
Nepal	62.7	114.9	65.1	113.5	75.2	110.1	1,615	1,943	162	187
Netherlands	79.8	111.0	87.0	106.1	88.6	102.8	5,696	7,952	21,663	*43,836*
New Zealand	75.4	129.1	90.8	120.3	95.5	113.4	4,089	5,361	..	..
Nicaragua	122.8	119.4	117.9	123.7	139.7	115.1	1,475	1,742	1,334	1,407
Niger	95.1	120.3	101.4	118.4	109.8	115.1	440	325	222	190
Nigeria	52.1	135.5	57.7	134.2	82.5	127.1	1,269	1,191	370	541
Norway	91.2	93.5	91.8	99.7	94.8	102.9	3,634	3,829	17,044	31,577
Oman	60.4	110.0	62.5	96.1	61.6	92.1	982	2,170	..	..
Pakistan	65.6	114.2	66.4	130.5	59.5	138.1	1,608	2,036	392	585
Panama	97.1	96.0	85.6	102.5	71.3	113.7	1,524	1,914	2,122	2,463
Papua New Guinea	86.5	106.3	86.1	106.8	84.5	105.4	2,087	2,493	717	827
Paraguay	58.4	103.9	60.6	116.7	62.1	112.3	1,511	2,241	2,506	3,295
Peru	81.0	132.8	78.4	131.5	78.2	124.9	1,944	2,688	1,349	1,619
Philippines	87.9	111.6	86.4	120.6	74.1	145.7	1,611	2,359	1,348	1,379
Poland	84.6	89.3	87.9	84.8	98.0	79.2	2,345	2,926	..	1,647
Portugal	84.5	93.1	71.9	99.8	71.8	109.9	1,102	2,187	..	*5,574*
Puerto Rico	131.2	66.4	99.7	83.7	90.3	89.2	8,925	6,774	..	..
Romania	113.7	102.7	112.7	100.5	110.0	94.5	2,854	3,004	..	3,170
Russian Federation	..	80.9	..	69.5	..	62.1	..	1,366	..	2,540

3.3 Agricultural output and productivity

	Crop production index		Food production index		Livestock production index		Cereal yield		Agricultural productivity	
	1989–91 = 100		1989–91 = 100		1989–91 = 100		kilograms per hectare		Agriculture value added per worker 1995 $	
	1979–81	1995–97	1979–81	1995–97	1979–81	1995–97	1979–81	1995–97	1979–81	1995–97
Rwanda	88.9	73.9	89.7	76.9	81.0	85.5	1,134	1,365	307	201
Saudi Arabia	27.2	99.1	31.0	90.8	32.8	118.8	820	3,491	2,167	10,507
Senegal	78.5	99.5	74.5	109.1	64.3	132.6	690	779	341	321
Sierra Leone	80.3	93.1	84.5	94.7	84.1	107.4	1,249	1,223	368	404
Singapore	595.0	56.6	154.3	37.9	173.7	38.0	..	..	13,937	39,851
Slovak Republic	..	92.0	..	74.4	..	65.1	..	4,170	..	3,347
Slovenia	..	120.3	..	100.9	..	99.3	..	4,977	..	26,006
South Africa	96.5	99.9	92.8	97.5	89.6	91.0	2,117	1,839	2,465	3,355
Spain	83.0	95.6	82.1	99.4	84.1	108.3	1,986	2,613	..	12,022
Sri Lanka	99.4	110.5	98.4	113.0	93.2	133.5	2,462	3,113	648	732
Sudan	121.8	160.1	104.2	139.8	90.9	122.2	645	523	..	..
Sweden	92.0	92.2	100.2	95.1	103.9	101.1	3,595	4,721	..	..
Switzerland	95.5	94.7	95.8	96.2	98.8	95.9	4,883	6,606	..	..
Syrian Arab Republic	100.5	146.2	94.5	136.7	72.6	105.2	1,156	1,588	..	..
Tajikistan	..	57.8	..	67.9	..	61.4	..	1,176	..	..
Tanzania	81.6	93.1	76.8	97.2	69.3	110.5	1,063	1,317	..	159
Thailand	80.5	112.4	79.9	107.2	65.4	112.5	1,911	2,385	630	928
Togo	70.4	128.4	77.0	129.9	51.9	121.8	729	830	345	510
Trinidad and Tobago	119.9	103.0	101.9	110.7	84.3	110.9	3,167	3,703	3,067	1,838
Tunisia	68.6	99.4	67.6	108.3	63.7	129.9	828	1,167	1,743	2,750
Turkey	76.6	108.7	75.8	106.3	80.6	102.6	1,869	2,081	1,852	1,835
Turkmenistan	..	80.0	..	108.7	..	119.6	..	1,959	..	..
Uganda	67.6	110.9	70.5	107.7	84.8	112.9	1,555	1,331	..	326
Ukraine	..	69.5	..	69.9	..	62.3	..	2,338	..	2,259
United Arab Emirates	38.9	204.1	47.0	182.2	41.8	140.2	5,608	7,729	..	..
United Kingdom	79.3	103.1	91.6	100.5	98.1	99.2	4,792	6,970	..	..
United States	98.9	113.7	94.7	113.7	89.0	112.9	4,151	5,043	..	34,727
Uruguay	86.4	142.2	86.8	128.8	85.5	120.0	1,644	3,301	6,822	9,384
Uzbekistan	..	86.1	..	100.7	..	103.1	..	1,957	..	2,085
Venezuela	76.4	108.2	79.6	114.0	84.9	117.4	1,904	3,068	4,041	4,931
Vietnam	66.6	134.3	64.0	132.7	54.2	135.2	2,049	3,670	..	226
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	82.3	111.8	75.0	115.5	68.9	121.5	1,038	982	..	305
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	65.9	93.3	74.2	95.6	86.2	98.4	1,676	1,574	331	226
Zimbabwe	78.0	105.5	82.1	94.8	84.9	97.1	1,359	1,095	307	316
World	79.5 w	122.7 w	79.6 w	125.1 w	80.7 w	131.5 w	2,373 w	2,870 w	.. w	.. w
Low income	73.3	119.4	72.5	120.3	71.9	132.0	1,347	1,852	..	344
Middle income	74.4	132.7	72.1	141.7	69.4	163.5	2,425	2,889	..	..
Lower middle income	71.7	143.1	67.6	160.0	57.8	201.1	2,610	2,969	..	..
Upper middle income	80.8	108.9	80.6	108.3	84.3	115.2	2,013	2,631	..	..
Low & middle income	74.1	128.5	72.2	135.1	70.0	156.1	1,958	2,473	..	567
East Asia & Pacific	69.6	129.9	64.5	142.3	49.6	173.4	2,765	*4,248*	..	..
Europe & Central Asia	..	195.2	..	204.9	..	273.2	..	1,843	..	2,202
Latin America & Carib.	82.1	115.6	80.4	118.9	82.2	118.8	1,840	2,576	..	..
Middle East & N. Africa	68.5	122.2	67.2	123.2	65.0	120.8	1,173	1,880	..	..
South Asia	72.5	116.3	70.3	119.2	63.9	127.3	1,410	2,197	265	347
Sub-Saharan Africa	77.1	111.9	79.5	108.3	92.6	118.9	1,089	1,050	418	371
High income	92.7	108.6	92.2	107.9	91.5	106.7	..	..	..	..
Europe EMU	90.1	101.5	91.6	100.4	95.0	99.5	3,612	5,180	..	*18,918*

a. Includes Luxembourg.

Agricultural output and productivity 3.3

About the data

The agricultural production indexes in the table are prepared by the Food and Agriculture Organization (FAO). The FAO obtains data from official and semiofficial reports of crop yields, area under production, and livestock numbers. If data are not available, the FAO makes estimates. The indexes are calculated using the Laspeyres formula: production quantities of each commodity are weighted by average international commodity prices in the base period and summed for each year. Because the FAO's indexes are based on the concept of agriculture as a single enterprise, estimates of the amounts retained for seed and feed are subtracted from the production data to avoid double counting. The resulting aggregate represents production available for any use except as seed and feed. The FAO's indexes may differ from other sources because of differences in coverage, weights, concepts, time periods, calculation methods, and use of international prices.

To ease cross-country comparisons, the FAO uses international commodity prices to value production. These prices, expressed in international dollars (equivalent in purchasing power to the U.S. dollar), are derived using a Geary-Khamis formula applied to agricultural outputs (see Inter-Secretariat Working Group on National Accounts 1993, sections 16.93–96). This method assigns a single price to each commodity so that, for example, one metric ton of wheat has the same price regardless of where it was produced. The use of international prices eliminates fluctuations in the value of output due to transitory movements of nominal exchange rates unrelated to the purchasing power of the domestic currency. Unlike the International Comparison Programme (ICP), the FAO calculates international prices only for agricultural products. Substantial differences may arise between the implicit exchange rate derived by the ICP and that of the FAO. For further discussion of the FAO's methods see FAO (1986). (See *About the data* for tables 4.11 and 4.12 for a discussion of the ICP.)

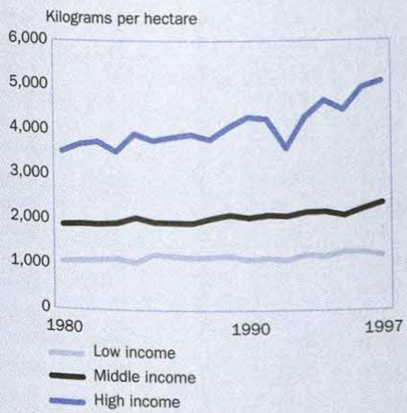
Data on cereal yields may be affected by a variety of reporting and timing differences. The FAO allocates production data to the calendar year in which the bulk of the harvest took place. But most of a crop harvested near the end of a year will be used in the following year. In general, cereal crops harvested for hay or harvested green for food, feed, or silage and those used for grazing are excluded. But millet and sorghum, which are grown as feed for livestock and poultry in Europe and North America, are used as food in Africa, Asia, and countries of the former Soviet Union.

Agricultural productivity is measured by value added per unit of input. (See *About the data* for tables 4.1 and 4.2 for further discussion of the calculation of value added in national accounts.) Agricultural value added includes that from forestry and fishing. Thus interpretations of land productivity should be made with caution.

To smooth annual fluctuations in agricultural activity, the indicators in the table have been averaged over three years.

Figure 3.3a

Cereal yield has grown fastest in high-income countries . . .

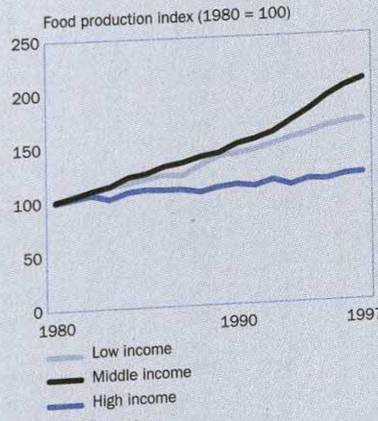


Source: Table 3.3.

The improved yield in high-income countries is largely a result of increased use of agricultural machinery (see table 3.2).

Figure 3.3b

. . . but food production overall has grown most in middle-income countries



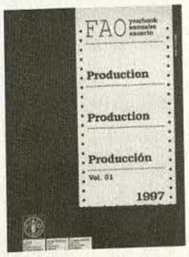
Source: Table 3.3.

During 1980–97 population growth was slower than growth in food production: population grew 47 percent in low-income economies, 30 percent in middle-income economies, and 12 percent in high-income economies.

Definitions

- **Crop production index** shows agricultural production for each year relative to the base period 1989–91. It includes all crops except fodder crops. Regional and income group aggregates for the FAO's production indexes are calculated from the underlying values in international dollars, normalized to the base period 1989–91. Data in this table are three-year averages. However, missing observations have not been estimated or imputed. • **Food production index** covers food crops that are considered edible and that contain nutrients. Coffee and tea are excluded because, although edible, they have no nutritive value. • **Livestock production index** includes meat and milk from all sources, dairy products such as cheese, eggs, honey, raw silk, wool, and hides and skins. • **Cereal yield,** measured in kilograms per hectare of harvested land, includes wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains. Production data on cereals refer to crops harvested for dry grain only. Cereal crops harvested for hay or harvested green for food, feed, or silage and those used for grazing are excluded. • **Agricultural productivity** refers to the ratio of agricultural value added, measured in constant 1995 U.S. dollars, to the number of workers in agriculture.

Data sources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Producción
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Agricultural production indexes are prepared by the FAO and published annually in its *Production Yearbook*. The FAO makes these data and data on cereal yields and agricultural employment available to the World Bank in electronic files that may contain more recent information than the published versions.

3.4 Biodiversity and protected areas

	Nationally protected areas		Mammals		Birds		Higher plants[a]		Reptiles		Amphibians	
	thousand sq. km 1996[b]	% of total land area 1996[b]	Species 1996[b]	Threatened species 1996[b]	Species 1996[b]	Threatened species 1996[b]	Species 1997	Threatened species 1997	Species 1996[b]	Threatened species 1996[b]	Species 1996[b]	Threatened species 1996[b]
Albania	0.8	2.9	68	2	230	7	3,031	79	31	1	13	0
Algeria	58.9	2.5	92	15	192	8	3,164	141	..	1	..	0
Angola	81.8	6.6	276	17	765	13	5,185	30	..	5	..	0
Argentina	46.6	1.7	320	27	897	41	9,372	247	220	5	145	5
Armenia	2.1	7.4	..	4	..	5	..	31	46	3	6	0
Australia	563.9	7.3	252	58	649	45	15,638	2,245	748	37	205	25
Austria	23.4	28.3	83	7	213	5	3,100	23	14	1	20	0
Azerbaijan	4.8	5.5	..	11	..	8	..	28	52	3	8	0
Bangladesh	1.0	0.8	109	18	295	30	5,000	24	119	13	19	0
Belarus	8.6	4.1	..	4	221	4	..	1	8	0	10	0
Belgium	0.8	..	58	6	180	3	1,550	2	8	0	17	0
Benin	7.8	7.1	188	9	307	1	2,201	4	..	2	..	0
Bolivia	156.0	14.4	316	24	*1,274*	27	17,367	227	208	3	112	0
Bosnia and Herzegovina	0.2	0.4	..	10	..	2	..	64	..	0	..	1
Botswana	105.0	18.5	164	5	386	7	2,151	7	157	0	38	0
Brazil	355.5	4.2	394	71	1,492	103	56,215	1,358	468	15	502	5
Bulgaria	4.9	4.4	81	13	240	12	3,572	106	33	1	17	0
Burkina Faso	28.6	10.5	147	6	335	1	*1,100*	0	..	1	..	0
Burundi	1.4	5.5	107	5	451	6	*2,500*	1	..	0	..	0
Cambodia	28.6	16.2	123	23	307	18	..	5	82	9	28	0
Cameroon	21.0	4.5	297	32	690	14	8,260	89	..	3	..	1
Canada	921.0	10.0	193	7	426	5	3,270	278	41	3	41	1
Central African Republic	51.1	8.2	209	11	537	2	3,602	1	..	1	..	0
Chad	114.9	9.1	134	14	370	3	1,600	12	..	1	..	0
Chile	141.3	18.9	91	16	296	18	5,284	329	72	1	41	3
China	598.1	6.4	394	75	1,100	90	32,200	312	340	15	263	1
Hong Kong, China	0.4	40.4	24	0	76	14	1,984	9	72	1	23	0
Colombia	93.6	9.0	359	35	1,695	64	51,220	712	584	15	585	0
Congo, Dem. Rep.	101.9	4.5	415	38	929	26	11,007	78	..	3	..	0
Congo, Rep.	15.4	4.5	200	10	449	3	6,000	3	..	2	..	0
Costa Rica	7.0	13.7	205	14	600	13	12,119	527	214	7	162	1
Côte d'Ivoire	19.9	6.3	230	16	535	12	3,660	94	..	4	..	1
Croatia	3.7	6.6	..	10	224	4	..	6	..	0	..	1
Cuba	19.1	17.4	31	9	137	13	6,522	888	102	7	41	0
Czech Republic	12.2	15.8	..	7	199	6	..	81	..	0	..	0
Denmark	13.7	32.3	43	3	196	2	1,450	2	5	0	14	0
Dominican Republic	12.2	25.2	20	4	136	11	5,657	136	105	10	35	1
Ecuador	119.3	43.1	302	28	1,388	53	19,362	824	374	12	402	0
Egypt, Arab Rep.	7.9	0.8	98	15	153	11	2,076	82	83	6	6	0
El Salvador	0.1	0.5	135	2	251	0	2,911	42	73	6	23	0
Eritrea	5.0	5.0	112	6	319	3	..	0	..	3	..	0
Estonia	5.1	12.1	65	4	213	2	..	2	5	0	11	0
Ethiopia	55.2	5.5	255	35	626	20	6,603	163	..	1	..	0
Finland	18.2	6.0	60	4	248	4	1,102	6	5	0	5	0
France	58.8	10.7	93	13	269	7	4,630	195	32	3	32	2
Gabon	7.2	2.8	190	12	466	4	6,651	91	..	3	..	0
Gambia, The	0.2	2.0	108	4	280	1	974	1	..	1	..	0
Georgia	1.9	2.7	..	10	..	5	..	29	46	7	11	0
Germany	94.2	27.0	76	8	239	5	2,682	14	12	0	20	0
Ghana	11.0	4.8	222	13	529	10	3,725	103	..	4	..	0
Greece	3.1	2.4	95	13	251	10	4,992	571	51	6	15	1
Guatemala	18.2	16.8	250	8	458	4	8,681	355	231	9	99	0
Guinea	1.6	0.7	190	11	409	12	3,000	39	..	3	..	1
Guinea-Bissau	0.0	0.0	108	4	243	1	*1,000*	*0*	..	3	..	0
Haiti	0.1	0.4	3	4	75	11	5,242	100	102	6	46	1
Honduras	11.1	9.9	173	7	422	4	5,680	96	152	7	56	0

Biodiversity and protected areas 3.4

	Nationally protected areas		Mammals		Birds		Higher plants[a]		Reptiles		Amphibians	
	thousand sq. km 1996[b]	% of total land area 1996[b]	Species 1996[b]	Threatened species 1996[b]	Species 1996[b]	Threatened species 1996[b]	Species 1997	Threatened species 1997	Species 1996[b]	Threatened species 1996[b]	Species 1996[b]	Threatened species 1996[b]
Hungary	6.3	6.8	72	8	205	10	2,214	30	15	1	17	0
India	142.9	4.8	316	75	923	73	16,000	1,236	389	16	197	3
Indonesia	192.3	10.6	436	128	1,519	104	29,375	264	511	19	270	0
Iran, Islamic Rep.	83.0	5.1	140	20	323	14	8,000	2	164	8	11	2
Iraq	0.0	0.0	81	7	172	12	..	*2*	81	2	6	0
Ireland	0.6	0.9	25	2	142	1	950	1	1	0	3	0
Israel	3.1	15.0	92	13	180	8	2,317	32	..	5	..	0
Italy	21.5	7.3	90	10	234	7	5,599	311	40	4	34	4
Jamaica	0.0	0.0	24	4	113	7	3,308	744	36	8	21	4
Japan	25.5	6.8	132	29	250	33	5,565	707	66	8	52	10
Jordan	3.0	3.4	71	7	141	4	2,100	9	..	1	..	0
Kazakhstan	73.4	2.7	..	15	..	15	..	71	37	1	10	1
Kenya	35.0	6.1	359	43	844	24	6,506	240	187	5	88	0
Korea, Dem. Rep.	3.1	2.6	..	7	115	19	2,898	4	19	0	14	0
Korea, Rep.	6.8	6.9	49	6	112	19	2,898	66	25	0	14	0
Kuwait	0.3	1.7	21	1	20	3	*234*	*0*	29	2	2	0
Kyrgyz Republic	6.9	3.6	..	6	..	5	..	34	23	1	3	0
Lao PDR	0.0	0.0	172	30	487	27	..	2	66	7	37	0
Latvia	7.8	12.6	83	4	217	6	*1,153*	*0*	7	0	13	0
Lebanon	0.0	0.0	54	5	154	5	3,000	5	..	2	..	0
Lesotho	0.1	0.3	33	2	58	5	1,591	21	..	0	..	0
Libya	1.7	0.1	76	11	91	2	1,825	57	..	3	..	0
Lithuania	6.5	10.0	68	5	202	4	..	1	7	0	13	0
Macedonia, FYR	1.8	7.1	..	10	..	3	..	*0*	..	1	..	0
Madagascar	11.2	1.9	105	46	202	28	9,505	306	252	17	144	2
Malawi	10.6	11.3	195	7	521	9	3,765	61	124	0	69	0
Malaysia	14.8	4.5	286	42	501	34	15,500	490	268	14	158	0
Mali	45.3	3.7	137	13	397	6	1,741	15	16	1	..	0
Mauritania	17.5	1.7	61	14	273	3	1,100	3	..	3	..	0
Mauritius	0.1	4.9	4	4	27	10	750	294	11	6	..	0
Mexico	71.0	3.7	450	64	769	36	26,071	1,593	687	18	285	3
Moldova	0.4	1.2	68	2	177	7	..	5	9	1	13	0
Mongolia	161.3	10.3	134	12	*390*	14	2,272	0	21	0	8	0
Morocco	3.2	0.7	105	18	210	11	3,675	186	..	2	..	0
Mozambique	47.8	6.1	179	13	498	14	5,692	89	..	5	62	0
Myanmar	1.7	0.3	251	31	867	44	7,000	32	203	20	75	0
Namibia	106.2	12.9	154	11	469	8	3,174	75	..	3	32	1
Nepal	11.1	7.8	167	28	611	27	6,973	20	80	5	36	0
Netherlands	2.4	7.1	55	6	191	3	1,221	1	7	0	16	0
New Zealand	63.3	23.6	10	3	150	44	2,382	211	40	11	3	1
Nicaragua	9.0	7.4	200	4	482	3	7,590	98	161	7	59	0
Niger	96.9	7.6	131	11	299	2	*1,170*	0	..	1	..	0
Nigeria	30.2	3.3	274	26	681	9	4,715	37	135	4	..	0
Norway	93.7	30.5	54	4	243	3	1,715	12	5	0	5	0
Oman	34.3	16.1	56	9	107	5	1,204	30	64	4	..	0
Pakistan	37.2	4.8	151	13	375	25	4,950	14	172	6	17	0
Panama	14.2	19.1	218	17	732	10	9,915	1,302	226	7	164	0
Papua New Guinea	0.1	0.0	214	57	644	31	11,544	92	280	10	197	0
Paraguay	14.0	3.5	305	10	556	26	7,851	129	120	3	85	0
Peru	34.6	2.7	344	46	1,538	64	18,245	906	298	9	315	1
Philippines	14.5	4.9	153	49	395	86	8,931	360	190	7	63	2
Poland	29.1	9.6	84	10	227	6	2,450	27	9	0	18	0
Portugal	5.9	6.4	63	13	207	7	5,050	269	29	0	17	1
Puerto Rico	0.1	1.1	16	3	105	11	2,493	223	46	9	19	3
Romania	10.7	4.6	84	16	247	11	3,400	99	25	2	19	0
Russian Federation	516.7	3.1	269	31	628	38	..	214	58	5	23	0

3.4 Biodiversity and protected areas

	Nationally protected areas		Mammals		Birds		Higher plants[a]		Reptiles		Amphibians	
	thousand sq. km **1996[b]**	% of total land area **1996[b]**	Species **1996[b]**	Threatened species **1996[b]**	Species **1996[b]**	Threatened species **1996[b]**	Species **1997**	Threatened species **1997**	Species **1996[b]**	Threatened species **1996[b]**	Species **1996[b]**	Threatened species **1996[b]**
Rwanda	3.6	14.6	151	9	513	6	*2,288*	0	..	0	..	0
Saudi Arabia	49.6	2.3	77	9	155	11	2,028	7	84	2	..	0
Senegal	21.8	11.3	155	13	384	6	2,086	31	..	7	..	0
Sierra Leone	0.8	1.1	147	9	466	12	2,090	29	..	3	..	0
Singapore	0.0	0.0	45	6	118	9	2,168	29	..	1	..	0
Slovak Republic	10.5	21.8	..	8	209	4	..	65	..	0	..	0
Slovenia	1.1	5.5	69	10	207	3	..	13	21	0	..	1
South Africa	65.8	5.4	247	33	596	16	23,420	2,215	299	19	95	9
Spain	42.2	8.4	82	19	278	10	5,050	985	53	6	25	3
Sri Lanka	8.6	13.3	88	14	250	11	3,314	455	144	8	39	0
Sudan	86.4	3.6	267	21	680	9	3,137	10	..	3	..	0
Sweden	36.2	8.8	60	5	249	4	1,750	13	6	0	13	0
Switzerland	7.1	18.0	75	6	193	4	3,030	30	14	0	18	0
Syrian Arab Republic	0.0	0.0	63	4	204	7	3,000	8	..	3	..	0
Tajikistan	5.9	4.2	..	5	..	9	..	50	38	1	2	0
Tanzania	138.2	15.6	316	33	822	30	10,008	436	284	4	124	0
Thailand	70.7	13.8	265	34	616	45	11,625	385	298	16	107	0
Togo	4.3	7.9	196	8	391	1	2,201	4	..	3	..	0
Trinidad and Tobago	0.2	3.9	100	1	260	3	2,259	21	70	5	26	0
Tunisia	0.4	0.3	78	11	173	6	2,196	24	..	2	..	0
Turkey	10.7	1.4	116	15	302	14	8,650	1,876	102	12	18	2
Turkmenistan	19.8	4.2	..	11	..	12	..	17	80	2	2	0
Uganda	19.1	9.6	338	18	830	10	5,406	15	149	1	50	0
Ukraine	9.0	1.6	..	15	263	10	..	52	19	2	16	0
United Arab Emirates	0.0	0.0	25	3	67	4	..	*0*	37	2	..	0
United Kingdom	50.6	20.9	50	4	230	2	1,623	18	8	0	7	0
United States	1,226.7	13.4	428	35	650	50	19,473	4,669	280	28	233	24
Uruguay	0.5	0.3	81	5	237	11	2,278	15	..	0	..	0
Uzbekistan	8.2	2.0	..	7	..	11	..	41	51	0	2	0
Venezuela	319.8	36.3	305	24	1,181	22	21,073	426	259	14	199	0
Vietnam	9.9	3.0	213	38	535	47	10,500	341	180	12	80	1
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	0.0	0.0	66	5	143	13	..	*149*	77	2	..	0
Yugoslavia, FR (Serb./Mont.)	0.0	0.0	..	*0*	..	*0*	..	*0*	..	..	..	..
Zambia	63.6	8.6	229	11	605	10	4,747	12	..	0	83	0
Zimbabwe	30.7	7.9	270	9	532	9	4,440	100	153	0	120	0
World	**8,543.5 s**	**6.6 w**	..	..	..	..	..	..	..	..	..	..
Low income	1,650.0	5.5	..	..	..	..	..	..	..	..	..	..
Middle income	3,592.5	5.2	..	..	..	..	..	..	..	..	..	..
Lower middle income	2,301.4	5.0	..	..	..	..	..	..	..	..	..	..
Upper middle income	1,291.1	5.7	..	..	..	..	..	..	..	..	..	..
Low & middle income	5,242.5	5.3	..	..	..	..	..	..	..	..	..	..
East Asia & Pacific	1,095.4	6.9	..	..	..	..	..	..	..	..	..	..
Europe & Central Asia	768.0	3.2	..	..	..	..	..	..	..	..	..	..
Latin America & Carib.	1,456.3	7.3	..	..	..	..	..	..	..	..	..	..
Middle East & N. Africa	242.0	2.2	..	..	..	..	..	..	..	..	..	..
South Asia	213.0	4.5	..	..	..	..	..	..	..	..	..	..
Sub-Saharan Africa	1,467.8	6.2	..	..	..	..	..	..	..	..	..	..
High income	3,301.0	10.8	..	..	..	..	..	..	..	..	..	..
Europe EMU	268.4	11.7	..	..	..	..	..	..	..	..	..	..

a. Flowering plants only. b. Data may refer to earlier years. They are the most recent reported by the World Conservation Monitoring Center in 1996.

Biodiversity and protected areas 3.4

About the data

Habitat conservation is vital for stemming the decline in biodiversity. Conservation efforts traditionally have focused on protected areas, which have grown substantially in recent decades. Measures of species richness are one of the most straightforward ways to indicate the importance of an area for biodiversity. The number of small plants and animals is usually estimated by sampling of plots. It is also important to know which aspects are under the most immediate threat. This, however, requires a large amount of data and time-consuming analysis. For this reason global analyses of the status of threatened species have been carried out for only a few groups of organisms. Only for birds has the status of all species been assessed. Although mammals approach birds in this respect, an estimated 45 percent of mammal species remain to be assessed. For plants the World Conservation Union's (IUCN) *1997 IUCN Red List of Threatened Plants* provides the first-ever comprehensive listing of threatened species on a global scale, the result of more than 20 years' work by botanists from around the world. Nearly 34,000 plant species, 12.5 percent of the total, are threatened with extinction.

The table shows information on protected areas, numbers of certain species, and numbers of those species under threat. The World Conservation Monitoring Centre (WCMC) compiles these data from a variety of sources. Because of differences in definitions and reporting practices, cross-country comparability is limited. Compounding these problems, available data cover different periods.

Nationally protected areas are areas of at least 1,000 hectares that fall into one of five management categories defined by the WCMC:

- Scientific reserves and strict nature reserves with limited public access.
- National parks of national or international significance (not materially affected by human activity).
- Natural monuments and natural landscapes with unique aspects.
- Managed nature reserves and wildlife sanctuaries.
- Protected landscapes and seascapes (which may include cultural landscapes).

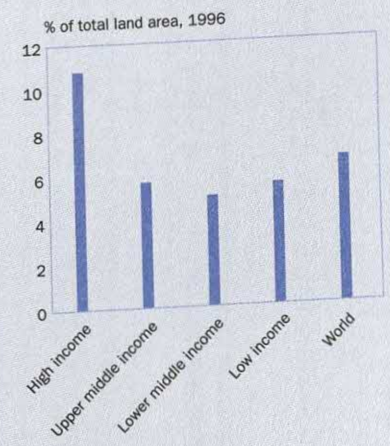
The first three categories, referred to as "totally protected," are areas maintained in a natural state and closed to extractive uses. (Designating land as a protected area does not necessarily mean that protection is in force, however.) The last two categories, referred to as "partially protected," are areas that may be managed for specific uses, such as recreation or tourism, or that provide optimal conditions for certain species or communities of wildlife, and in which some natural resource extraction is allowed. For small countries that may only have protected areas smaller than 1,000 hectares, this size limit in the definition will result in an underestimate of the extent and number of protected areas.

Threatened species are defined according to the IUCN's classification categories: endangered (in danger of extinction and unlikely to survive if causal factors continue operating), vulnerable (likely to move into the endangered category in the near future if causal factors continue operating), rare (not endangered or vulnerable, but at risk), indeterminate (known to be endangered, vulnerable, or rare but not enough information is available to say which), out of danger (formerly included in one of the above categories but now considered relatively secure because appropriate conservation measures are in effect), and insufficiently known (suspected but not definitely known to belong to one of the above categories).

Figures on species are not necessarily comparable across countries because taxonomic concepts and coverage vary. And while the number of birds and mammals is fairly well known, it is difficult to make an accurate count of plants. Although the data in the table should be interpreted with caution, especially for numbers of threatened species (where our knowledge is very incomplete), they do identify countries that are major sources of global biodiversity and show national commitments to habitat protection.

Figure 3.4

High-income economies have the largest share of protected land area



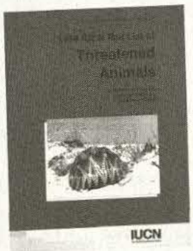
Source: Table 3.4.

But several developing economies rank in the top 10—Ecuador, Venezuela, and the Dominican Republic protect more than 25 percent of their land.

Definitions

- **Nationally protected areas** are totally or partially protected areas of at least 1,000 hectares that are designated as national parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes and seascapes, or scientific reserves with limited public access. The data do not include sites protected under local or provincial law. Total land area is used to calculate the percentage of total area protected (see table 3.1). • **Mammals** exclude whales and porpoises. • **Birds** are listed for countries included within their breeding or wintering ranges.
- **Higher plants** refer to native vascular plant species.
- **Reptiles** refer to a class of air-breathing vertebrates that include lizards, snakes, turtles, alligators, and crocodiles. • **Amphibians** include frogs, toads, newts, and salamanders. • **Threatened species** are the number of species classified by the IUCN as endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known.

Data sources



Data on protected areas are from the WCMC's Protected Areas Data Unit. Data on species are from the WCMC's *Biodiversity Data Sourcebook* (1994) and the IUCN's *1996 IUCN Red List of Threatened Animals* and *1997 IUCN Red List of Threatened Plants.*

3.5 Freshwater

	Freshwater resources	Annual freshwater withdrawals					Access to safe water			
							Urban		Rural	
	cubic meters per capita	billion cu. m[a]	% of total resources[a]	% for agriculture[b]	% for industry[b]	% for domestic[b]	% of population		% of population	
	1997						1982	1995	1982	1995
Albania	16,785[c]	0.2[d]	0.4[c]	76	18	6	100	97	88	70
Algeria	463[c]	4.5	33.2[c]	60[e]	15[e]	25[e]	100	..	70	..
Angola	15,782	0.5	0.3	76[e]	10[e]	14[e]	80	69	15	15
Argentina	27,861[c]	27.6[d]	2.8[c]	73	18	9	63	71	17	24
Armenia	2,136[c]	3.8	47.0[c]	72	15	13	..	..	..	..
Australia	18,508	14.6[d]	4.3	33	2	65	..	..	..	..
Austria	11,187[c]	2.4	2.6[c]	9	58	33	100	..	98	..
Azerbaijan	4,339[c]	15.8	47.9[c]	74	22	4	..	..	..	..
Bangladesh	19,065[c]	22.5	1.0[c]	96	1	3	24	49	40	..
Belarus	1,841[c]	3.0	15.9[c]	19	49	32	100	..	100	..
Belgium	1,227[c]	9.0	72.2[c]	4	85	11	100	..	91	..
Benin	4,451[c]	0.2	0.6[c]	67[e]	10[e]	23[e]	45	82	9	69
Bolivia	38,625	1.2	0.4	85	5	10	81	88	27	43
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	9,589[c]	0.1	0.7[c]	48[e]	20[e]	32[e]	98	100	72	77
Brazil	42,459[c]	36.5	0.5[c]	59	19	22	..	80	52	28
Bulgaria	24,663[c]	13.9	6.8[c]	22	76	3	95	..	67	..
Burkina Faso	1,671	0.4	2.2	81[e]	0[e]	19[e]	50	..	26	..
Burundi	559	0.1	2.8	64[e]	0[e]	36[e]	33	..	22	..
Cambodia	47,530[c]	0.5	0.1[c]	94	1	5	..	20	..	12
Cameroon	19,231	0.4	0.1	35[e]	19[e]	46[e]	46	..	30	30
Canada	95,785[c]	45.1	1.6[c]	12	70	18	100	..	100	..
Central African Republic	41,250	0.1	0.0	74[e]	5[e]	21[e]	24	20	5	25
Chad	6,011[c]	0.2	0.4[c]	82[e]	2[e]	16[e]	27	48	30	17
Chile	32,007	16.8[d]	3.6	89	5	6	97	99	22	47
China	2,282	460.0	16.4	87	7	6	..	..	..	..
Hong Kong, China	..	..	..	..	..	..	..	..	..	..
Colombia	26,722	5.3	0.5	43	16	41	100	90	76	32
Congo, Dem. Rep.	21,816[c]	0.4	0.0[c]	23[e]	16[e]	61[e]	43	89	5	26
Congo, Rep.	307,283[c]	0.0	0.0[c]	11[e]	27[e]	62[e]	42	..	7	11
Costa Rica	27,425	1.4[d]	1.4	89	7	4	100	100	82	99
Côte d'Ivoire	5,468	0.7	0.9	67[e]	11[e]	22[e]	30	..	10	..
Croatia	12,879	..	..	..	..	..	82	75	46	41
Cuba	3,120	8.1[d]	23.5	89	2	9	..	98	..	72
Czech Republic	5,649	2.7	4.7	2	57	41	100	..	100	..
Denmark	2,460[c]	1.2	9.2[c]	43	27	30	100	..	99	..
Dominican Republic	2,467	3.0	14.9	89	6	5	72	88	24	55
Ecuador	26,305	5.6	1.8	90	3	7	83	81	33	10
Egypt, Arab Rep.	966[c]	55.1	94.5[c]	86[e]	8[e]	6[e]	93	95	61	74
El Salvador	3,197	1.0[d]	5.3	89	4	7	76	82	47	24
Eritrea	2,332[c]	..	..[c]	..	..	..	..	..	..	..
Estonia	12,071[c]	3.3	18.8[c]	3	92	5	..	..	..	..
Ethiopia	1,841	2.2	2.0	86[e]	3[e]	11[e]	93	..	42	..
Finland	21,985[c]	2.2	1.9[c]	3	85	12	98	..	86	..
France	3,029[c]	37.7	21.3[c]	15	69	16	100	100	95	100
Gabon	142,278	0.1	0.0	6[e]	22[e]	72[e]	75	..	34	..
Gambia, The	6,775[c]	0.0	0.3[c]	91[e]	2[e]	7[e]	100	..	27	..
Georgia	8,291[c]	4.0	8.9[c]	42	37	21	..	..	..	..
Germany	2,084[c]	46.3	27.1[c]	20	70	11	..	..	..	..
Ghana	2,958[c]	0.3[d]	0.6[c]	52[e]	13[e]	35[e]	57	88	40	52
Greece	5,289[c]	5.0	9.1[c]	63	29	8	91	..	73	..
Guatemala	11,028	0.7[d]	0.6	74	17	9	89	97	39	48
Guinea	32,661	0.7	0.3	87[e]	3[e]	10[e]	91	55	2	44
Guinea-Bissau	23,745[c]	0.0	0.1[c]	36[e]	4[e]	60[e]	21	38	37	57
Haiti	1,468	0.0	0.4	68	8	24	59	38	32	39
Honduras	9,259[c]	1.5	2.7[c]	91	5	4	51	91	49	66

Freshwater 3.5

	Freshwater resources	Annual freshwater withdrawals					Access to safe water			
	cubic meters per capita **1997**	billion cu. m[a]	% of total resources[a]	% for agriculture[b]	% for industry[b]	% for domestic[b]	Urban % of population **1982**	Urban % of population **1995**	Rural % of population **1982**	Rural % of population **1995**
Hungary	11,817[c]	6.8	5.7[c]	36	55	9	*92*	..	*81*	..
India	2,167[c]	380.0[d]	18.2[c]	93	4	*3*	72	..	*47*	82
Indonesia	12,625	16.6	0.7	76	11	*13*	*60*	87	*32*	57
Iran, Islamic Rep.	1,339[c]	70.0[d]	85.8[c]	92	2	6	70	98	33	82
Iraq	3,451[c]	42.8[d]	56.8[c]	92	5	*3*	92	*92*	22	44
Ireland	13,657[c]	0.8[d]	1.6[c]	10	74	*16*	*100*	..	*92*	..
Israel	377[c]	1.9	84.1[c]	79[e]	5[e]	*16*[e]	*100*	100	*100*	95
Italy	2,903[c]	56.2	33.7[c]	59	27	14	*100*	..	*96*	..
Jamaica	3,250	0.3[d]	3.9	86	7	7	*99*	..	*93*	..
Japan	4,338	90.8	16.6	50	33	17	..	..	..	..
Jordan	198[c]	0.5[d]	51.1[c]	75	3	*22*	100	..	65	..
Kazakhstan	8,696[c]	37.9	27.6[c]	79	17	4	..	..	..	..
Kenya	1,056[c]	2.1	6.8[c]	76[e]	4[e]	20[e]	*61*	..	*21*	..
Korea, Dem. Rep.	2,927	14.2	21.1	73	16	*11*	*100*	100	*100*	100
Korea, Rep.	1,438	27.6	41.7	46	35	19	..	93	..	77
Kuwait	11	0.5	2,700.0	60	2	*37*	100	100	100	100
Kyrgyz Republic	2,509	11.0	94.9	95	3	2	..	..	..	..
Lao PDR	55,679	1.0	0.4	82	10	8	..	..	..	..
Latvia	13,793[c]	0.7	2.1[c]	14	44	*42*	..	*92*	..	..
Lebanon	941[c]	1.3[d]	33.1[c]	68	4	28	95	..	85	..
Lesotho	2,597	0.1	1.0	56[e]	22[e]	22[e]	37	64	14	60
Libya	115	4.6	766.7	87[e]	2[e]	11[e]	*92*	90	*75*	91
Lithuania	6,531[c]	4.4	18.2[c]	3	90	7	..	..	..	..
Macedonia, FYR	..	..	..	..	..	..	*100*	..	*98*	..
Madagascar	23,819	16.3	4.8	99[e]	0[e]	1[e]	*81*	..	*17*	..
Malawi	1,814[c]	0.9	4.8[c]	86[e]	3[e]	*10*[e]	60	*97*	53	*52*
Malaysia	21,046	9.4[d]	2.1	47	30	*23*	..	100	..	86
Mali	9,718[c]	1.4	1.4[c]	97[e]	1[e]	*2*[e]	58	56	20	*20*
Mauritania	4,632[c]	1.6[d]	14.3[c]	92	2	6	*80*	*87*	*16*	41
Mauritius	1,925	0.4[d]	16.3	77[e]	7[e]	*16*[e]	100	..	98	..
Mexico	3,788	77.6[d]	21.7	86	8	*6*	*95*	..	*50*	..
Moldova	397[c]	3.7	216.4[c]	23	70	*7*	..	98	..	18
Mongolia	9,677	0.6	2.2	62	27	*11*	*100*	*100*	*100*	*68*
Morocco	1,088	10.9	36.5	92[e]	3[e]	*5*[e]	63	97	2	20
Mozambique	12,989[c]	0.6	0.3[c]	89	2[e]	*9*[e]	82	..	2	*40*
Myanmar	24,651	4.0	0.4	90	3	7	*36*	*78*	*21*	*50*
Namibia	28,042[c]	0.3	0.5[c]	68[e]	3[e]	29[e]	..	..	..	..
Nepal	7,616	2.7	1.6	95	1	*4*	75	*61*	6	*59*
Netherlands	5,767[c]	7.8	8.7[c]	34	61	*5*	*100*	..	*99*	..
New Zealand	532	2.0	100.0	44	10	46	*100*	..	100	..
Nicaragua	37,420	0.9[d]	0.5	54	21	*25*	*77*	93	*13*	28
Niger	3,317[c]	0.5	1.5[c]	82[e]	2[e]	16[e]	80	*70*	40	*44*
Nigeria	2,375[c]	3.6	1.3[c]	54[e]	15[e]	31[e]	*60*	80	*30*	39
Norway	89,008[c]	2.0	0.5[c]	8	72	*20*	*100*	100	95	100
Oman	439	1.2	123.2	94	2	*5*	70	..	10	..
Pakistan	3,256[c]	155.6[d]	37.2[c]	97	2	*2*	77	*85*	22	*56*
Panama	52,961	1.3	0.9	77	11	*12*	*100*	99	*64*	73
Papua New Guinea	177,963	0.1	0.0	49	22	29	*54*	..	*10*	..
Paraguay	61,750[c]	0.4	0.1[c]	78	7	*15*	*49*	70	*8*	6
Peru	1,641	6.1	15.3	72	9	*19*	*73*	91	*17*	31
Philippines	4,393	29.5[d]	9.1	61	21	*18*	..	*91*	..	*81*
Poland	1,454[c]	12.3	21.9[c]	11	76	*13*	*89*	..	*73*	..
Portugal	6,998[c]	7.3	10.5[c]	48	37	15	*97*	..	*50*	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	9,222[c]	26.0	12.5[c]	59	33	8	*91*	..	*50*	..
Russian Federation	30,168[c]	117.0	2.6[c]	23	60	17	..	..	..	..

3.5 Freshwater

	Freshwater resources	Annual freshwater withdrawals					Access to safe water			
	cubic meters per capita	billion	% of total	% for	% for	% for	Urban		Rural	
							% of population		% of population	
	1997	cu. m[a]	resources[a]	agriculture[b]	industry[b]	domestic[b]	1982	1995	1982	1995
Rwanda	798	0.8	12.2	94[e]	2[e]	5[e]	*55*	79	*60*	*44*
Saudi Arabia	120	17.0[d]	709.2	90	1	9	92	..	87	..
Senegal	4,482[c]	1.4	3.5[c]	92[e]	3[e]	5[e]	*63*	*90*	*27*	*44*
Sierra Leone	33,698	0.4	0.2	89[e]	4[e]	*7*[e]	50	*58*	3	*21*
Singapore	193	0.2[d]	31.7	4	51	*45*	100	..	..	..
Slovak Republic	5,720	1.8	5.8	..	..	..	..	..	..	..
Slovenia	..	..	..	..	..	..	..	..	..	..
South Africa	1,231[c]	13.3	26.6[c]	72[e]	11[e]	17[e]	..	90	..	33
Spain	2,398[c]	30.8	32.6[c]	62	26	12	*100*	..	*95*	..
Sri Lanka	2,329	6.3[d]	14.6	96	2	*2*	*76*	88	*26*	65
Sudan	3,191[c]	17.8	20.1[c]	94[e]	1[e]	*4*[e]	49	84	45	41
Sweden	20,340[c]	2.9	1.6[c]	9	55	36	*100*	..	*98*	..
Switzerland	7,054[c]	1.2	2.4[c]	4	73	*23*	*100*	*100*	*100*	*100*
Syrian Arab Republic	859[c]	14.4	112.6[c]	94	2	*4*	*77*	*96*	65	*79*
Tajikistan	..	12.6	..	88	7	5	..	..	..	..
Tanzania	2,842[c]	1.2	1.3[c]	89[e]	2[e]	*9*[e]	88	..	40	..
Thailand	2,954[c]	31.9	17.8[c]	90	6	*4*	..	94	..	88
Togo	2,762[c]	0.1	0.8[c]	25[e]	13[e]	62[e]	*68*	82	*26*	41
Trinidad and Tobago	3,901	0.2[d]	2.9	35	38	*27*	*100*	100	*93*	88
Tunisia	447[c]	3.1	74.5[c]	89[e]	3[e]	*9*[e]	96	*100*	29	*76*
Turkey	2,246[c]	31.6	22.1[c]	72[e]	11[e]	*16*[e]	*73*	..	*65*	..
Turkmenistan	3,950[c]	22.8	123.9[c]	91	8	1	..	..	..	..
Uganda	3,248[c]	0.2	0.3[c]	60	8	*32*	*45*	60	*12*	36
Ukraine	4,556[c]	34.7	15.0[c]	30	54	16	..	..	..	..
United Arab Emirates	58	2.1	1,406.7	92	1	*7*	100	*98*	100	*98*
United Kingdom	1,203	11.8	16.6	3	77	20	*100*	*100*	*100*	*100*
United States	9,259[c]	467.3	18.9[c]	42[e]	45[e]	13[e]	*100*	..	*100*	..
Uruguay	37,966[c]	0.7[d]	0.5[c]	91	3	*6*	*95*	99	*27*	..
Uzbekistan	5,476[c]	82.2	63.4[c]	84	12	4	..	..	..	..
Venezuela	57,821[c]	4.1[d]	0.3[c]	46	11	*43*	*88*	79	*65*	79
Vietnam	4,902	28.9	7.7	78	9	*13*	*90*	..	*30*	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	255	2.9	71.5	92[e]	1[e]	7[e]	..	74	..	14
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	12,284[c]	1.7	1.5[c]	77[e]	7[e]	16[e]	*70*	66	*32*	37
Zimbabwe	1,744[c]	1.2	6.1[c]	79[e]	7[e]	*14*[e]	*100*	..	*10*	..
World	8,336 w	..	..	69 w	22 w	9 w	.. w	.. w	.. w	.. w
Low income	6,252	..	..	92	4	*4*	69	80.9	*39*	64.9
Middle income	9,522	..	..	74	17	9	..	88.7	..	76.7
Lower middle income	6,878	..	..	75	17	8	..	..	..	..
Upper middle income	20,069	..	..	70	17	*13*	..	..	*59*	..
Low & middle income	8,156	..	..	81	12	7	..	..	..	..
East Asia & Pacific	..	..	..	84	8	7	..	..	..	..
Europe & Central Asia	13,220	..	..	54	36	10	..	..	..	..
Latin America & Carib.	27,386	..	..	77	11	*12*	..	83	*47*	36
Middle East & N. Africa	1,045	..	..	90	4	*6*	84	..	45	..
South Asia	4,085	..	..	94	3	*3*	70	..	*43*	84
Sub-Saharan Africa	8,565	..	..	85	4	10	*63*	..	*28*	..
High income	9319	..	..	40	45	15	..	99.4	*95*	95.2
Europe EMU	3,568	..	..	37	50	13	*100*	..	*90*	..

a. Refers to any year from 1980 to 1997 unless otherwise noted. b. Unless otherwise noted, sectoral withdrawal shares are estimated for 1987. c. Total water resources include river flows from other countries. d. Data refer to estimates for years before 1980 (see *Primary data documentation*). e. Data refer to years other than 1987 (see *Primary data documentation*).

Freshwater 3.5

About the data

Data on freshwater resources are based on estimates of runoff into rivers and recharge of groundwater. These estimates are based on different sources and refer to different years, so cross-country comparisons of data on freshwater resources should be made with caution. Because they are collected intermittently, the data may hide significant variations in total renewable water resources from one year to the next. The data also fail to distinguish between seasonal and geographic variations in water availability within countries. Data for small countries and countries in arid and semiarid zones are less reliable than those for larger countries and countries with higher rainfall. Finally, caution is also needed in comparing data on annual freshwater withdrawals, which are subject to variations in collection and estimation methods.

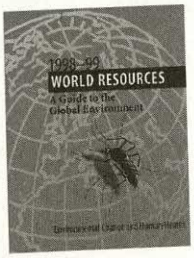
World Development Indicators 1999 defines freshwater resources as including river flows arising outside the country. The data in this year's edition therefore are not comparable with those published in last year's, which exclude external sources.

While information on access to safe water is widely used, it is extremely subjective, and such terms as *safe* and *adequate amount* may have very different meanings in different countries despite official World Health Organization definitions (see *Definitions* for table 2.14). Even in industrial countries treated water may not always be safe to drink. While access to safe water is equated with connection to a public supply system, this does not take account of variations in the quality and cost (broadly defined) of the service once connected. Thus cross-country comparisons must be made cautiously. Changes over time within countries may result from changes in definitions or measurements.

Definitions

• **Freshwater resources** refer to total renewable resources, which include flows of rivers and groundwater from rainfall in the country, and river flows from other countries. Freshwater resources per capita are calculated using the World Bank's population estimates (see table 2.1). • **Annual freshwater withdrawals** refer to total water withdrawal, not counting evaporation losses from storage basins. Withdrawals also include water from desalination plants in countries where they are a significant source of water withdrawals. Withdrawal data are for single years between 1980 and 1997 unless otherwise indicated. Withdrawals can exceed 100 percent of renewable supplies where extraction from nonrenewable aquifers or desalination plants is considerable or where there is significant water reuse. Withdrawals for agriculture and industry are total withdrawals for irrigation and livestock production and for direct industrial use (including withdrawals for cooling thermoelectric plants). Withdrawals for domestic uses include drinking water, municipal use or supply, and use for public services, commercial establishments, and homes. For most countries sectoral withdrawal data are estimated for 1987. • **Access to safe water** refers to the percentage of people with reasonable access to an adequate amount of safe water in a dwelling or within a convenient distance of their dwelling (see *About the data*).

Data sources


1998–99
WORLD RESOURCES
A Guide to the Global Environment
Environmental Change and Human Health

Data are compiled by the World Resources Institute from various sources and published in *World Resources 1998–99* (World Resources Institute and others 1998). The Département Hydrogéologie in Orléans, France, compiles data on water resources and withdrawals from published documents, including national, United Nations, and professional literature. The Institute of Geography at the National Academy of Sciences in Moscow also compiles global water data on the basis of published work and, where necessary, estimates water resources and consumption from models that use other data, such as area under irrigation, livestock populations, and precipitation.

3.6 Water pollution

	Emissions of organic water pollutants				Industry shares of emissions of organic water pollutants							
	kilograms per day		kilograms per day per worker		Primary metals %	Paper and pulp %	Chemicals %	Food and beverages %	Stone, ceramics, and glass %	Textiles %	Wood %	Other %
	1980	1996[a]	1980	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]
Albania	..	*4,654*	..	*0.22*	*29.0*	*1.7*	*7.2*	*53.6*	*0.6*	*4.3*	*1.1*	*2.6*
Algeria	60,290	*103,569*	0.19	*0.25*	*44.6*	..	*3.8*	*40.8*	*0.4*	*8.0*	*2.5*	*0.0*
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	244,711	*186,844*	0.18	*0.21*	*6.3*	*12.6*	*8.1*	*59.4*	*0.2*	*7.4*	*1.5*	*9.2*
Armenia	..	*14,833*	..	*0.22*	..	..	*0.0*	*64.2*	..	*35.8*	..	..
Australia	204,333	..	0.18	..	..	..	..	..	..	..	..	..
Austria	108,416	*79,779*	0.16	*0.15*	*13.9*	*19.3*	*9.4*	*35.4*	*0.3*	*6.9*	*4.2*	*21.3*
Azerbaijan	..	*45,025*	..	*0.17*	*11.6*	*2.5*	*12.0*	*49.0*	*0.2*	*18.1*	*1.0*	*11.3*
Bangladesh	66,713	..	0.16	..	..	..	..	..	..	..	..	..
Belarus	..	..	..	..	..	..	..	..	..	..	..	..
Belgium	136,452	..	0.16	..	..	..	..	..	..	..	..	..
Benin	1,646	..	0.28	..	..	..	..	..	..	..	..	..
Bolivia	9,343	*10,251*	0.22	*0.23*	*4.7*	*13.8*	*6.5*	*61.8*	*0.3*	*9.0*	*2.6*	*2.4*
Bosnia and Herzegovina	..	*3,217*	..	*0.19*	*4.4*	*18.6*	*9.7*	*44.9*	*0.1*	*16.0*	*4.0*	*4.5*
Botswana	1,307	*4,561*	0.24	*0.19*	*0.0*	*11.2*	*2.7*	*67.6*	*0.0*	*13.1*	*2.0*	*6.5*
Brazil	866,790	..	0.16	..	..	..	..	..	..	..	..	..
Bulgaria	152,125	*93,669*	0.13	*0.14*	*13.9*	*8.7*	*11.0*	*38.4*	*0.3*	*16.1*	*2.1*	*18.9*
Burkina Faso	2,385	..	0.29	..	..	..	..	..	..	..	..	..
Burundi	769	..	0.22	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	14,569	*12,472*	0.29	*0.24*	*2.3*	*5.2*	*20.1*	*65.5*	*0.0*	*3.2*	*3.4*	*0.6*
Canada	330,241	292,089	0.18	0.17	9.9	30.0	8.8	34.2	0.1	5.7	3.9	14.9
Central African Republic	861	..	0.26	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	44,371	78,917	0.21	0.23	6.4	11.9	7.8	60.5	0.1	8.0	2.5	5.4
China	3,377,105	8,863,225	0.14	0.13	19.0	13.2	11.8	28.9	0.6	16.1	1.1	18.4
Hong Kong, China	102,002	*61,073*	0.11	*0.14*	*1.3*	*33.6*	*4.9*	*18.2*	*0.0*	*33.4*	*0.4*	*16.3*
Colombia	96,055	114,136	0.19	0.20	3.5	14.2	10.2	53.2	0.2	14.4	1.0	6.4
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	*1,039*	..	*0.21*	..	..	..	..	..	..	..	..	..
Costa Rica	..	..	..	..	..	..	..	..	..	..	..	..
Côte d'Ivoire	15,414	..	0.23	..	..	..	..	..	..	..	..	..
Croatia	..	*55,250*	..	*0.16*	*5.1*	*12.8*	*8.5*	*46.1*	*0.2*	*17.7*	*3.5*	*12.3*
Cuba	120,703	..	0.24	..	..	..	..	..	..	..	..	..
Czech Republic	..	..	..	..	..	..	..	..	..	..	..	..
Denmark	65,465	88,461	0.17	0.17	2.1	29.2	7.7	45.7	0.2	3.4	2.9	17.6
Dominican Republic	54,935	..	0.38	..	..	..	..	..	..	..	..	..
Ecuador	25,297	*28,713*	0.23	*0.25*	*2.8*	*12.4*	*8.5*	*65.6*	*0.1*	*7.1*	*1.6*	*3.8*
Egypt, Arab Rep.	169,146	*215,264*	0.19	*0.20*	*11.4*	*6.1*	*8.0*	*53.4*	*0.3*	*17.3*	*0.4*	*6.2*
El Salvador	9,390	*10,399*	0.24	*0.19*	*3.0*	*17.5*	*11.2*	*41.2*	*0.2*	*24.7*	*1.0*	*2.5*
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..	..	..	..	..
Ethiopia	..	*19,496*	0.22	..	*2.1*	*10.1*	*3.1*	*57.2*	*0.2*	*25.1*	*1.7*	..
Finland	92,275	65,585	0.17	0.18	9.5	39.2	7.1	29.4	0.1	3.0	3.5	16.1
France	729,776	585,382	0.14	0.15	11.6	21.2	10.8	37.7	0.2	6.0	1.8	21.5
Gabon	2,661	*1,886*	0.15	*0.26*	*0.0*	*6.0*	*4.9*	*79.7*	*0.1*	*1.2*	*6.9*	*2.4*
Gambia, The	549	..	0.30	..	..	..	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..
Germany	..	*811,315*	..	*0.12*	*12.7*	*16.8*	*15.5*	*30.6*	*0.3*	*4.8*	*2.2*	*34.3*
Ghana	15,868	*14,449*	0.20	*0.17*	*9.8*	*16.9*	*10.5*	*39.5*	*0.2*	*9.1*	*12.4*	*3.3*
Greece	65,304	58,533	0.17	0.20	6.1	12.3	8.4	53.3	0.3	14.6	1.5	7.0
Guatemala	20,856	*19,052*	0.25	*0.28*	*5.3*	*8.0*	*6.2*	*71.4*	*0.1*	*6.9*	*1.1*	*2.0*
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	4,734	..	0.19	..	..	..	..	..	..	..	..	..
Honduras	13,067	*34,036*	0.23	*0.20*	*1.1*	*7.8*	*3.9*	*55.5*	*0.1*	*26.8*	*4.0*	*1.5*

Water pollution 3.6

	Emissions of organic water pollutants				Industry shares of emissions of organic water pollutants							
	kilograms per day		kilograms per day per worker		Primary metals %	Paper and pulp %	Chemicals %	Food and beverages %	Stone, ceramics, and glass %	Textiles %	Wood %	Other %
	1980	1996[a]	1980	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]
Hungary	201,888	138,248	0.15	0.18	10.5	10.0	8.1	51.7	0.2	10.9	1.9	13.5
India	1,457,474	1,694,090	0.21	0.19	14.1	7.5	7.6	52.8	0.2	12.2	0.3	10.4
Indonesia	214,010	*749,872*	0.22	*0.18*	*2.2*	*7.8*	*8.1*	*53.9*	*0.2*	*20.4*	*4.9*	*5.1*
Iran, Islamic Rep.	72,334	..	0.15	..	..	..	..	..	..	..	..	..
Iraq	32,986	..	0.19	..	..	..	..	..	..	..	..	..
Ireland	43,544	34,000	0.19	0.16	1.8	17.2	10.6	52.2	0.2	6.8	1.8	18.8
Israel	39,113	*55,029*	0.15	*0.16*	*3.7*	*19.7*	*9.4*	*43.9*	*0.2*	*12.1*	*1.8*	*18.6*
Italy	442,712	*359,578*	0.13	*0.13*	*12.1*	*16.0*	*11.8*	*28.7*	*0.3*	*16.1*	*2.5*	*25.2*
Jamaica	11,123	*17,972*	0.25	*0.29*	*7.2*	*7.0*	*4.3*	*70.4*	*0.1*	*9.7*	*1.2*	..
Japan	1,456,016	1,479,350	0.14	0.14	8.7	21.8	8.8	38.9	0.2	7.1	1.9	25.2
Jordan	4,146	*15,189*	0.17	*0.18*	*4.2*	*14.6*	*14.2*	*52.1*	*0.6*	*7.8*	*3.3*	*6.4*
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kenya	26,834	48,354	0.19	*0.24*	*4.1*	*11.7*	*5.6*	*65.2*	*0.1*	*8.7*	*1.9*	*5.3*
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	281,900	353,295	0.14	0.12	12.2	17.2	11.5	26.4	0.3	16.5	1.6	28.8
Kuwait	6,921	*7,913*	0.16	*0.14*	*2.9*	*4.5*	*13.6*	*49.7*	*0.4*	*18.1*	*4.1*	*13.3*
Kyrgyz Republic	..	*20,700*	..	*0.16*	*13.7*	*0.2*	*0.9*	*54.8*	*0.4*	*21.0*	*1.0*	*16.0*
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	..	*26,542*	..	*0.17*	*3.2*	*10.4*	*4.9*	*57.8*	*0.2*	*11.6*	*5.6*	*12.5*
Lebanon	14,586	..	0.20	..	..	..	..	..	..	..	..	..
Lesotho	*993*	*2,550*	*0.24*	*0.16*	*0.8*	*2.2*	*0.9*	*41.0*	*0.1*	*54.7*	*0.2*	..
Libya	3,532	..	0.21	..	..	..	..	..	..	..	..	..
Lithuania	..	*48,621*	..	*0.15*	*1.3*	*8.4*	*3.9*	*55.4*	*0.4*	*19.2*	*4.2*	*14.8*
Macedonia, FYR	..	*22,663*	..	*0.18*	*12.0*	*9.8*	*6.2*	*43.6*	*0.1*	*21.7*	*1.9*	*9.2*
Madagascar	9,131	..	0.23	..	..	..	..	..	..	..	..	..
Malawi	12,224	*9,055*	0.32	*0.26*	*0.0*	*12.6*	*5.1*	*67.7*	*0.1*	*11.6*	*1.7*	*2.2*
Malaysia	77,215	156,515	0.15	0.11	7.0	14.9	16.0	28.7	0.3	8.4	8.6	32.1
Mali	2,726	..	0.20	..	..	..	..	..	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	9,224	*17,780*	0.21	*0.16*	*1.0*	*5.8*	*2.3*	*38.9*	*0.1*	*50.0*	*0.8*	*2.4*
Mexico	130,993	*142,921*	0.22	*0.19*	*9.9*	*9.4*	*13.2*	*54.5*	*0.2*	*6.6*	*0.4*	*11.5*
Moldova	..	*34,234*	..	*0.29*	*0.2*	*4.0*	*1.4*	*81.7*	*0.2*	*10.8*	*1.3*	*1.1*
Mongolia	9,254	*7,939*	0.19	*0.18*	*1.8*	*4.3*	*0.9*	*64.2*	*0.3*	*24.6*	*4.9*	*1.6*
Morocco	26,598	*84,077*	0.15	*0.19*	*0.8*	*7.9*	*6.7*	*54.7*	*0.3*	*26.1*	*1.0*	*5.1*
Mozambique	..	*12,486*	..	*0.27*	*3.0*	*8.0*	*4.4*	*73.7*	*0.1*	*7.7*	*1.6*	*2.8*
Myanmar	..	*3,192*	..	*0.11*	*22.4*	*7.9*	*5.8*	*21.9*	*0.3*	*5.1*	*34.8*	*3.2*
Namibia	..	*7,350*	..	*0.35*	*0.0*	*5.0*	*1.6*	*90.4*	*0.1*	*1.2*	*0.9*	*1.6*
Nepal	*18,692*	*32,544*	*0.25*	*0.14*	*1.9*	*5.4*	*4.1*	*47.4*	*1.4*	*37.8*	*1.3*	*1.6*
Netherlands	165,416	*127,566*	0.18	0.18	7.5	25.7	11.6	43.1	0.1	2.5	1.1	16.7
New Zealand	59,012	..	0.21	..	..	..	..	..	..	..	..	..
Nicaragua	9,647	..	0.28	..	..	..	..	..	..	..	..	..
Niger	372	..	0.19	..	..	..	..	..	..	..	..	..
Nigeria	72,082	..	0.17	..	..	..	..	..	..	..	..	..
Norway	67,897	*49,504*	0.19	*0.20*	*9.8*	*31.7*	*5.3*	*42.2*	*0.1*	*1.7*	*2.5*	*13.4*
Oman	..	236	..	0.15	2.5	5.9	13.6	55.1	0.4	11.0	4.2	13.9
Pakistan	75,125	..	0.17	..	..	..	..	..	..	..	..	..
Panama	8,241	*12,963*	0.26	*0.29*	*1.0*	*10.1*	*4.9*	*75.2*	*0.1*	*7.0*	*1.1*	*1.2*
Papua New Guinea	4,365	..	0.22	..	..	..	..	..	..	..	..	..
Paraguay	..	..	..	..	..	..	..	..	..	..	..	..
Peru	50,367	..	0.18	..	..	..	..	..	..	..	..	..
Philippines	182,052	..	0.19	..	..	..	..	..	..	..	..	..
Poland	580,869	374,540	0.14	0.16	14.7	5.4	7.0	49.2	0.3	13.1	2.1	16.6
Portugal	105,441	147,077	0.16	0.14	3.2	13.4	4.8	38.7	0.4	29.2	4.5	11.6
Puerto Rico	24,034	*18,202*	0.16	*0.14*	*0.9*	*9.7*	*16.9*	*41.4*	*0.1*	*21.9*	*1.1*	*16.0*
Romania	343,145	*333,168*	0.12	*0.14*	*17.1*	*6.7*	*9.0*	*34.3*	*0.3*	*18.5*	*4.8*	*18.8*
Russian Federation	..	*1,706,742*	..	*0.14*	*17.6*	*6.8*	*9.0*	*43.5*	*0.4*	*9.7*	*2.8*	*20.5*

3.6 Water pollution

	Emissions of organic water pollutants				Industry shares of emissions of organic water pollutants							
	kilograms per day		kilograms per day per worker		Primary metals %	Paper and pulp %	Chemicals %	Food and beverages %	Stone, ceramics, and glass %	Textiles %	Wood %	Other %
	1980	1996[a]	1980	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]	1996[a]
Rwanda	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	*18,181*	..	*0.12*	..	..	..	..	..	..	..	..	..
Senegal	9,865	*8,840*	0.31	*0.32*	*0.0*	*5.1*	*7.4*	*83.1*	*0.1*	*3.1*	*0.1*	*2.1*
Sierra Leone	*1,612*	..	*0.24*	..	..	..	..	..	..	..	..	..
Singapore	28,558	34,317	0.10	0.09	2.5	27.1	13.4	19.8	0.1	5.9	1.3	59.7
Slovak Republic	..	*64,293*	..	*0.14*	*15.5*	*13.8*	*9.6*	*34.9*	*0.3*	*14.0*	*1.6*	*20.7*
Slovenia	..	*42,059*	..	*0.16*	*28.6*	*16.0*	*8.0*	*22.7*	*0.2*	*13.8*	*4.4*	*12.6*
South Africa	237,599	*240,228*	0.17	*0.17*	*11.6*	*17.0*	*9.8*	*40.2*	*0.2*	*11.5*	*3.3*	*12.8*
Spain	376,253	334,624	0.16	0.16	7.3	17.8	8.8	46.4	0.3	8.5	3.4	15.2
Sri Lanka	30,086	..	0.18	..	..	..	..	..	..	..	..	..
Sudan	..	..	..	..	..	..	..	..	..	..	..	..
Sweden	130,439	92,068	0.15	0.16	11.8	36.4	7.5	28.3	0.1	1.7	3.0	22.2
Switzerland	..	*129,957*	..	*0.17*	*25.3*	*23.6*	*10.3*	*24.7*	*0.2*	*3.4*	*4.2*	*17.0*
Syrian Arab Republic	36,262	*21,421*	0.19	*0.22*	*2.9*	*1.5*	*8.4*	*68.3*	*0.4*	*17.2*	*0.3*	*2.2*
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	21,084	..	0.21	..	..	..	..	..	..	..	..	..
Thailand	*213,271*	..	*0.22*	..	..	..	..	..	..	..	..	..
Togo	963	..	0.27	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	7,835	*11,963*	0.18	*0.28*	*4.2*	*10.6*	*6.4*	*73.4*	*0.1*	*2.9*	*1.4*	*2.0*
Tunisia	20,294	*44,289*	0.16	*0.16*	*7.2*	*8.1*	*5.9*	*41.1*	*0.4*	*32.6*	*1.7*	*6.2*
Turkey	160,173	*173,258*	0.20	0.17	12.9	7.8	7.2	44.2	0.3	22.1	0.9	9.5
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	..	..	..	..	..	..	..	..	..	..	..	..
Ukraine	..	*551,834*	..	*0.15*	*18.6*	*3.8*	*7.4*	*51.0*	*0.5*	*7.3*	*1.8*	*19.3*
United Arab Emirates	*4,524*	..	*0.15*	..	..	..	..	..	..	..	..	..
United Kingdom	964,510	695,784	0.15	0.16	11.2	25.6	9.8	35.0	0.1	6.9	2.0	19.0
United States	2,742,993	2,559,947	0.14	0.15	8.5	32.6	10.1	27.5	0.2	7.2	2.7	22.2
Uruguay	34,270	31,567	0.21	0.24	1.2	12.3	5.9	65.2	0.2	12.7	0.9	3.4
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	84,797	*98,144*	0.20	*0.21*	*13.0*	*11.5*	*13.8*	*50.0*	*0.2*	*7.1*	*1.4*	*5.9*
Vietnam	..	..	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	*7,462*	..	*0.28*	*5.4*	*5.2*	*12.4*	*71.6*	*0.2*	*5.0*	*0.2*	..
Yugoslavia, FR (Serb./Mont.)	..	*123,680*	..	*0.15*	*9.3*	*12.5*	*7.6*	*42.9*	*0.3*	*16.8*	*2.1*	*16.9*
Zambia	13,605	*11,433*	0.23	*0.22*	*3.4*	*10.8*	*7.3*	*63.6*	*0.2*	*9.3*	*2.9*	*4.7*
Zimbabwe	32,681	31,598	0.20	0.19	14.0	10.7	5.5	48.5	0.2	13.8	3.7	7.1
World	..	..	..	..	..	..	..	..	..	..	..	..
Low income	..	..	..	..	..	..	..	..	..	..	..	..
Middle income	..	..	..	..	..	..	..	..	..	..	..	..
Lower middle income	..	..	..	..	..	..	..	..	..	..	..	..
Upper middle income	..	..	..	..	..	..	..	..	..	..	..	..
Low & middle income	..	..	..	..	..	..	..	..	..	..	..	..
East Asia & Pacific	..	..	..	..	..	..	..	..	..	..	..	..
Europe & Central Asia	..	..	..	..	..	..	..	..	..	..	..	..
Latin America & Carib.	..	..	..	..	..	..	..	..	..	..	..	..
Middle East & N. Africa	..	..	..	..	..	..	..	..	..	..	..	..
South Asia	..	..	..	..	..	..	..	..	..	..	..	..
Sub-Saharan Africa	..	..	..	..	..	..	..	..	..	..	..	..
High income	..	..	..	..	..	..	..	..	..	..	..	..
Europe EMU	..	..	..	..	..	..	..	..	..	..	..	..

Note: Industry shares may not sum to 100 percent because data may be from different years.
a. Data refer to any year from 1993 to 1996.

Water pollution 3.6

About the data

Emissions of organic pollutants from industrial activities are a major cause of water quality degradation. Water quality and pollution levels are generally measured in terms of concentration, or load—the rate of occurrence of a substance in an aqueous solution. Polluting substances include organic matter, metals, minerals, sediment, bacteria, and toxic chemicals. This table focuses on organic water pollution resulting from industrial activities. Because water pollution tends to be sensitive to local conditions, the national-level data in the table may not reflect the quality of water in specific locations.

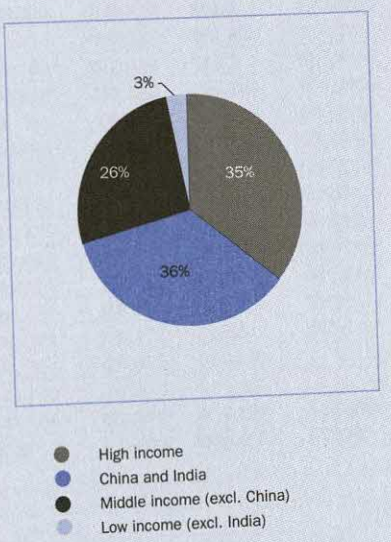
The data in the table come from an international study of industrial emissions that may be the first to include data from developing countries (Hettige, Mani, and Wheeler 1998). Unlike estimates from earlier studies based on engineering or economic models, these estimates are based on actual measurements of plant-level water pollution. The focus is on organic water pollution measured in terms of biochemical oxygen demand (BOD) because the data for this indicator are the most plentiful and reliable for comparing emissions across countries. BOD measures the strength of an organic waste in terms of the amount of oxygen consumed in breaking it down. A sewage overload in natural waters exhausts the water's dissolved oxygen content. Wastewater treatment, by contrast, reduces BOD.

Data on water pollution are more readily available than other emissions data because most industrial pollution control programs start by regulating emissions of organic water pollutants. Such data are fairly reliable because sampling techniques for measuring water pollution are more widely understood and much less expensive than those for air pollution.

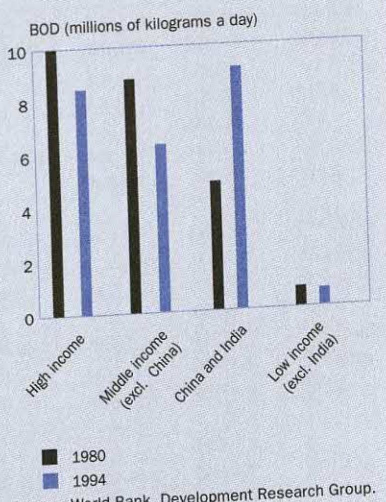
In their study Hettige, Mani, and Wheeler (1998) used plant- and sector-level information on emissions and employment from 13 national environmental protection agencies and sector-level information on output and employment from the United Nations Industrial Development Organization (UNIDO). Their econometric analysis found that the ratio of BOD to employment in each industrial sector is about the same across countries. This finding allowed the authors to estimate BOD loads across countries and over time. The estimated BOD intensities per unit of employment were multiplied by sectoral employment numbers from UNIDO's industry database for 1975–96. The sectoral emissions estimates were then totaled to get daily BOD emissions in kilograms per day for each country and year.

Figure 3.6

China and India accounted for a large share of the emissions of organic water pollutants in 1994 . . .



. . . and have not seen the decline in these emissions seen elsewhere



Source: World Bank, Development Research Group.

Definitions

- **Emissions of organic water pollutants** are measured in terms of biochemical oxygen demand, which refers to the amount of oxygen that bacteria in water will consume in breaking down waste. This is a standard water treatment test for the presence of organic pollutants. Emissions per worker are total emissions divided by the number of industrial workers.
- **Industry shares of emissions of organic water pollutants** refer to emissions from manufacturing activities as defined by two-digit divisions of the International Standard Industrial Classification (ISIC) revision 2: primary metals (ISIC division 37), paper and pulp (34), chemicals (35), food and beverages (31), stone, ceramics, and glass (36), textiles (32), wood (33), and other (38 and 39).

Data sources

The indicators for 1980–93 are from a 1998 study by Hemamala Hettige, Muthukumara Mani, and David Wheeler, "Industrial Pollution in Economic Development: Kuznets Revisited" (available on the World Wide Web at http://www.worldbank.org/NIPR). These indicators have been updated through 1996 by the Development Research Group of the World Bank, with the same methodology used in the initial study. Sectoral employment numbers are from UNIDO's industry database.

3.7 Energy production and use

	Commercial energy production		Commercial energy use			Commercial energy use per capita			Net energy imports	
	thousand metric tons of oil equivalent 1980	1996	thousand metric tons of oil equivalent 1980	1996	average annual % growth 1980–96	kg of oil equivalent 1980	1996	average annual % growth 1980–96	% of commercial energy use 1980	1996
Albania	3,428	1,079	3,049	1,188	–6.6	1,142	362	–8.0	–12	9
Algeria	67,061	116,207	12,410	24,150	3.7	665	842	1.0	–440	–381
Angola	11,301	40,485	4,538	6,017	1.8	647	532	–1.2	–149	–573
Argentina	38,813	74,860	41,868	58,921	2.1	1,490	1,673	0.7	7	–27
Armenia	1,263	742	1,070	1,790	–3.7	346	474	*–4.9*	–18	59
Australia	86,096	189,045	70,372	100,612	2.3	4,790	5,494	0.9	–22	–88
Austria	7,655	7,788	23,450	27,187	1.3	3,105	3,373	0.9	67	71
Azerbaijan	14,821	14,387	15,002	11,862	–4.4	2,433	1,570	*–5.6*	1	–21
Bangladesh	13,224	21,501	14,920	23,928	3.1	172	197	0.9	11	10
Belarus	2,566	3,147	2,385	24,566	8.0	247	2,386	*7.5*	–8	87
Belgium	7,445	11,881	46,100	56,399	1.7	4,682	5,552	1.4	84	79
Benin	1,212	1,951	1,363	1,920	2.1	394	341	–1.0	11	–2
Bolivia	4,289	5,239	2,335	3,633	2.2	436	479	0.0	–84	–44
Bosnia and Herzegovina	..	626	..	1,750	..	..	777	..	..	64
Botswana	..	..	..	..	..	..	..	..	..	..
Brazil	62,069	112,319	108,997	163,374	2.8	896	1,012	1.0	43	31
Bulgaria	7,737	10,348	28,673	22,605	–2.4	3,235	2,705	–2.0	73	54
Burkina Faso	..	..	..	..	..	..	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..
Cameroon	5,824	10,016	3,687	5,000	1.7	426	369	–1.1	–58	–100
Canada	207,417	357,279	193,000	236,170	1.6	7,848	7,880	0.3	–7	–51
Central African Republic	..	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..
Chile	5,664	7,843	9,525	20,456	5.4	855	1,419	3.7	41	62
China	608,625	1,100,390	593,109	1,096,800	4.1	604	902	2.6	–3	0
Hong Kong, China	39	47	5,681	12,190	5.7	1,127	1,931	4.4	99	100
Colombia	18,212	66,739	19,127	31,393	3.1	672	799	1.0	5	–113
Congo, Dem. Rep.	8,697	13,689	8,706	13,799	3.1	322	305	–0.2	0	1
Congo, Rep.	3,970	11,493	845	1,205	2.2	506	457	–0.6	–370	–854
Costa Rica	767	736	1,527	2,248	3.4	669	657	0.7	50	67
Côte d'Ivoire	2,419	4,762	3,662	5,301	2.8	447	382	–0.6	34	10
Croatia	..	3,908	..	6,765	..	..	1,418	..	..	42
Cuba	3,891	6,709	14,570	15,953	0.4	1,501	1,448	–0.5	73	58
Czech Republic	42,697	31,528	46,910	40,404	–1.7	4,585	3,917	–1.7	9	22
Denmark	896	17,549	19,734	22,870	0.9	3,852	4,346	0.8	95	23
Dominican Republic	1,332	1,462	3,464	5,191	2.2	608	652	0.1	62	72
Ecuador	11,756	21,869	5,191	8,548	2.6	652	731	0.2	–126	–156
Egypt, Arab Rep.	34,168	59,759	15,970	37,790	5.1	391	638	2.6	–114	–58
El Salvador	1,915	2,607	2,540	4,058	2.5	554	700	1.0	25	36
Eritrea	..	..	..	..	..	..	..	..	..	..
Estonia	..	3,853	..	5,621	..	..	3,834	..	..	31
Ethiopia	10,588	15,536	11,157	16,566	2.7	296	284	–0.1	5	6
Finland	6,912	13,570	25,413	31,482	1.5	5,316	6,143	1.1	73	57
France	45,603	129,811	190,111	254,196	2.1	3,528	4,355	1.6	76	49
Gabon	9,441	19,706	1,493	1,578	–0.9	2,160	1,403	–3.9	–532	–1,149
Gambia, The	..	..	..	..	..	..	..	..	..	..
Georgia	4,706	701	4,474	1,576	–5.4	882	291	*–5.8*	–5	55
Germany	185,628	140,445	360,441	349,552	–0.2	4,603	4,267	–0.5	48	60
Ghana	3,305	5,604	4,071	6,657	3.6	379	380	0.4	19	16
Greece	3,696	8,810	15,960	24,389	3.1	1,655	2,328	2.5	77	64
Guatemala	2,503	3,997	3,754	5,224	2.6	550	510	0.0	33	23
Guinea	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..
Haiti	1,877	1,598	2,099	1,968	–0.9	392	268	–2.8	11	19
Honduras	1,315	1,763	1,877	2,925	2.9	526	503	–0.2	30	40

Energy production and use 3.7

	Commercial energy production		Commercial energy use			Commercial energy use per capita			Net energy imports	
	thousand metric tons of oil equivalent		thousand metric tons of oil equivalent		average annual % growth	kg of oil equivalent		average annual % growth	% of commercial energy use	
	1980	**1996**	**1980**	**1996**	**1980–96**	**1980**	**1996**	**1980–96**	**1980**	**1996**
Hungary	14,886	12,843	28,895	25,470	–1.2	2,699	2,499	–0.8	48	50
India	221,887	390,602	242,024	450,287	4.0	352	476	1.9	8	13
Indonesia	128,403	219,187	59,561	132,419	5.4	402	672	3.5	–116	–66
Iran, Islamic Rep.	84,001	220,894	38,918	89,340	6.0	995	1,491	3.2	–116	–147
Iraq	136,643	32,584	12,030	25,027	4.0	925	1,174	0.8	–1,036	–30
Ireland	1,894	3,470	8,484	11,961	2.3	2,495	3,293	2.0	78	71
Israel	153	573	8,609	16,185	5.1	2,220	2,843	2.6	98	96
Italy	19,644	29,305	138,629	161,140	1.4	2,456	2,808	1.3	86	82
Jamaica	224	547	2,378	3,718	3.4	1,115	1,465	2.3	91	85
Japan	43,193	102,377	346,491	510,359	2.8	2,967	4,058	2.4	88	80
Jordan	1	181	1,714	4,487	5.1	786	1,040	0.6	100	96
Kazakhstan	76,799	62,628	76,799	43,376	–4.4	5,163	2,724	*–4.9*	0	–44
Kenya	7,891	11,245	9,791	13,279	2.2	589	476	–1.1	19	15
Korea, Dem. Rep.	29,136	21,052	31,793	24,002	–1.6	1,799	1,063	–3.1	8	12
Korea, Rep.	12,162	22,752	43,756	162,874	9.3	1,148	3,576	8.1	72	86
Kuwait	94,085	112,600	9,564	13,859	1.0	6,956	8,167	0.7	–884	–712
Kyrgyz Republic	2,190	1,442	1,717	2,952	5.6	473	645	*4.1*	–27	51
Lao PDR	..	..	..	..	..	..	..	..	..	..
Latvia	261	998	..	4,171	..	..	1,674	..	54	76
Lebanon	178	195	2,483	4,747	3.7	827	1,164	1.7	93	96
Lesotho	..	..	..	..	..	..	..	..	..	..
Libya	96,662	77,742	7,173	14,911	4.4	2,357	2,935	1.1	–1,248	–421
Lithuania	534	4,168	11,701	8,953	–3.4	3,428	2,414	*–4.0*	95	53
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..
Madagascar	..	..	..	..	..	..	..	..	..	..
Malawi	..	..	..	..	..	..	..	..	..	..
Malaysia	16,644	69,559	11,128	41,209	9.0	809	1,950	6.0	–50	–69
Mali	..	..	..	..	..	..	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..
Mauritius	..	..	..	..	..	..	..	..	..	..
Mexico	149,365	213,524	98,904	141,384	2.2	1,464	1,525	0.2	–51	–51
Moldova	35	53	..	4,601	..	..	1,064	..	106	99
Mongolia	..	..	..	..	..	..	..	..	..	..
Morocco	877	868	4,778	8,822	4.2	247	329	2.1	82	90
Mozambique	8,556	7,249	8,386	7,813	–0.4	693	481	–2.0	–2	7
Myanmar	9,513	11,835	9,430	12,767	1.8	279	294	0.3	–1	7
Namibia	..	..	..	..	..	..	..	..	..	..
Nepal	4,504	6,374	4,663	6,974	2.7	322	320	0.1	3	9
Netherlands	71,830	73,384	65,000	75,797	1.5	4,594	4,885	0.9	–11	3
New Zealand	5,488	13,585	9,251	16,295	3.8	2,972	4,388	2.9	41	17
Nicaragua	910	1,495	1,562	2,391	2.6	535	525	–0.1	42	37
Niger	..	..	..	..	..	..	..	..	..	..
Nigeria	148,479	170,453	52,846	82,669	2.9	743	722	–0.1	–181	–106
Norway	55,743	208,145	18,819	23,150	1.7	4,600	5,284	1.2	–196	–799
Oman	15,175	47,310	1,387	4,848	10.0	1,260	2,231	5.4	–994	–876
Pakistan	20,998	41,494	25,479	55,903	5.0	308	446	2.3	18	26
Panama	529	756	1,865	2,280	1.7	957	853	–0.3	72	67
Papua New Guinea	..	..	..	..	..	..	..	..	..	..
Paraguay	1,605	6,678	2,094	4,285	4.6	672	865	1.5	23	–56
Peru	14,655	12,354	11,700	13,933	0.8	675	582	–1.2	–25	11
Philippines	10,670	17,232	21,212	37,992	3.7	439	528	1.1	50	55
Poland	121,848	102,363	124,806	108,411	–1.5	3,508	2,807	–2.0	2	6
Portugal	1,481	2,432	10,291	19,148	4.5	1,054	1,928	4.5	86	87
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	52,587	31,317	64,694	45,824	–2.8	2,914	2,027	–2.9	19	32
Russian Federation	749,289	948,631	764,349	615,899	–3.3	5,499	4,169	*–3.6*	2	–54

3.7 Energy production and use

	Commercial energy production		Commercial energy use			Commercial energy use per capita			Net energy imports	
	thousand metric tons of oil equivalent		thousand metric tons of oil equivalent		average annual % growth	kg of oil equivalent		average annual % growth	% of commercial energy use	
	1980	**1996**	**1980**	**1996**	**1980–96**	**1980**	**1996**	**1980–96**	**1980**	**1996**
Rwanda	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	533,071	474,997	35,357	92,243	5.2	3,773	4,753	0.4	–1,408	–415
Senegal	1,046	1,566	1,921	2,588	2.0	347	302	–0.7	46	39
Sierra Leone	..	..	..	..	..	..	..	..	..	..
Singapore	..	55	6,054	23,851	10.0	2,653	7,835	8.1	*100*	100
Slovak Republic	3,416	4,818	20,810	17,449	–1.4	4,175	3,266	–1.8	84	72
Slovenia	1,623	2,762	4,313	6,167	1.2	2,269	3,098	1.0	62	55
South Africa	73,068	127,859	65,355	99,079	2.0	2,370	2,482	–0.4	–12	–29
Spain	15,644	32,622	68,583	101,411	3.1	1,834	2,583	2.8	77	68
Sri Lanka	3,209	4,204	4,493	6,792	2.1	305	371	0.7	29	38
Sudan	7,089	9,486	8,169	10,787	1.8	437	397	–0.5	13	12
Sweden	16,134	31,804	40,984	52,567	1.3	4,932	5,944	0.9	61	39
Switzerland	7,030	10,479	20,861	25,622	1.6	3,301	3,622	0.8	66	59
Syrian Arab Republic	9,502	33,705	5,348	14,541	5.7	614	1,002	2.4	–78	–132
Tajikistan	1,986	1,343	1,650	3,513	7.7	416	594	*5.1*	–20	62
Tanzania	9,502	13,073	10,280	13,798	2.0	553	453	–1.1	8	5
Thailand	11,183	43,954	22,740	79,987	9.0	487	1,333	7.3	51	45
Togo	..	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	13,141	13,575	3,873	7,887	4.2	3,580	6,081	3.1	–239	–72
Tunisia	6,966	6,289	3,900	6,676	3.7	611	735	1.4	–79	6
Turkey	17,190	26,783	31,314	65,520	4.9	704	1,045	2.6	45	59
Turkmenistan	8,034	32,623	7,948	12,164	–7.6	2,778	2,646	*–10.5*	–1	–168
Uganda	..	..	..	..	..	..	..	..	..	..
Ukraine	109,708	79,042	97,893	153,937	1.2	1,956	3,012	*1.0*	–12	49
United Arab Emirates	93,915	148,818	8,576	32,336	7.3	8,222	13,155	1.7	–995	–360
United Kingdom	196,792	268,126	201,299	234,719	1.1	3,574	3,992	0.8	2	–14
United States	1,553,260	1,687,300	1,811,650	2,134,960	1.4	7,973	8,051	0.4	14	21
Uruguay	664	1,021	2,637	2,955	0.9	905	912	0.2	75	65
Uzbekistan	4,615	47,406	4,821	42,406	9.5	302	1,826	*7.0*	4	–12
Venezuela	132,934	193,993	35,026	54,962	2.1	2,321	2,463	–0.4	–280	–253
Vietnam	18,052	38,437	19,348	33,750	2.9	360	448	0.7	7	–14
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	60	18,181	1,424	2,936	4.7	167	187	0.6	96	–519
Yugoslavia, FR (Serb./Mont.)	..	10,987	..	14,420	..	..	1,364	..	..	24
Zambia	4,198	5,357	4,551	5,790	1.2	793	628	–1.7	8	7
Zimbabwe	5,688	8,721	6,511	10,442	3.4	929	929	0.4	13	16
World	**6,911,503 t**	**9,438,480 t**	**6,943,349 t**	**9,317,404 t**	**2.9 w**	**1,623 w**	**1,684 w**	**1.1 w**	**.. w**	**.. w**
Low income	563,859	916,261	493,168	837,277	3.6	390	461	1.2	–14	–9
Middle income	3,552,971	4,833,815	2,635,621	3,652,666	4.6	1,205	1,305	2.7	–35	–32
Lower middle income	2,200,925	3,205,571	1,954,874	2,667,023	5.8	1,103	1,190	3.9	–13	–20
Upper middle income	1,352,046	1,628,244	680,747	985,643	2.1	1,643	1,766	0.2	–99	–65
Low & middle income	4,116,830	5,750,076	3,128,789	4,489,943	4.4	906	973	2.3	–32	–28
East Asia & Pacific	832,224	1,521,645	768,319	1,458,927	4.2	572	855	2.6	..	..
Europe & Central Asia	1,240,595	1,437,762	1,338,028	1,287,193	7.6	3,300	2,732	3.9	7	–12
Latin America & Carib.	468,430	751,684	376,913	557,686	2.4	1,062	1,163	0.5	–24	–35
Middle East & N. Africa	989,486	1,096,558	146,618	337,967	5.1	842	1,246	2.2	–577	–225
South Asia	263,822	464,175	291,579	543,884	4.0	329	441	1.8	10	15
Sub-Saharan Africa	322,273	478,251	207,332	304,286	2.3	720	670	–0.6	..	..
High income	2,794,673	3,688,405	3,814,560	4,827,461	1.8	4,625	5,259	1.1	27	24
Europe EMU	363,765	444,746	940,145	1,091,718	1.2	3,408	3,768	0.9	61	59

Energy production and use 3.7

About the data

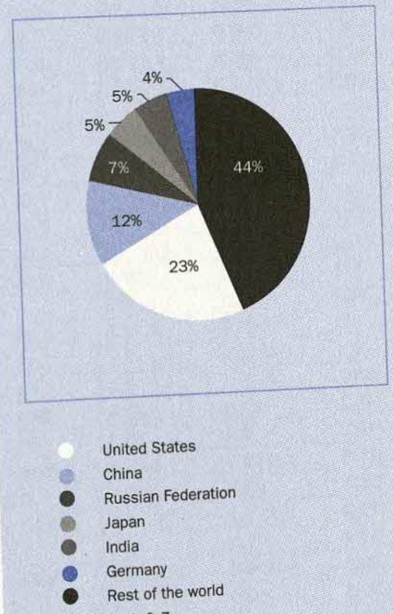
In developing countries growth in commercial energy use is closely related to growth in the modern sectors—industry, motorized transport, and urban areas—but commercial energy use also reflects climatic, geographic, and economic factors (such as the relative price of energy). Commercial energy use has been growing rapidly in low- and middle-income countries, but high-income countries still use almost seven times as much on a per capita basis. Because commercial energy is widely traded, it is necessary to distinguish between its production and its use. Net energy imports show the extent to which an economy's use exceeds its domestic production. High-income countries are net energy importers; middle-income countries have been their main suppliers.

Energy data are compiled by the International Energy Agency (IEA) and the United Nations Statistical Division (UNSD). IEA data for non-OECD countries are based on national energy data that have been adjusted to conform with annual questionnaires completed by OECD member governments. UNSD data are primarily from responses to questionnaires sent to national governments, supplemented by official national statistical publications and by data from intergovernmental organizations. When official data are not available, the UNSD prepares estimates based on the professional and commercial literature. This variety of sources affects the cross-country comparability of data.

Commercial energy use refers to the use of domestic primary energy before transformation to other end-use fuels (such as electricity and refined petroleum products). It includes energy from combustible renewables and waste, which comprises solid biomass and animal products, gas and liquid from biomass, industrial waste, and municipal waste. Biomass is defined as any plant matter used directly as fuel or converted into fuels or electricity or heat. (The series published in the previous editions of the *World Development Indicators* did not include energy from combustible renewables and waste.) All forms of commercial energy—primary energy and primary electricity—are converted into oil equivalents. To convert nuclear electricity into oil equivalents, a notional thermal efficiency of 33 percent is assumed; for hydroelectric power 100 percent efficiency is assumed.

Figure 3.7

Four countries accounted for almost 40 percent of commercial energy use in 1996



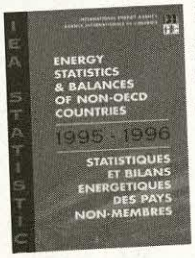
Source: Table 3.7.

The United States uses the most commercial energy. Other big consumers are Russia, Japan, and Germany. Although these four countries combined account for less than 11 percent of the world's population, together they consume almost 40 percent of the world's commercial energy.

Definitions

- **Commercial energy production** refers to commercial forms of primary energy—petroleum (crude oil, natural gas liquids, and oil from nonconventional sources), natural gas, and solid fuels (coal, lignite, and other derived fuels)—and primary electricity, all converted into oil equivalents (see *About the data*).
- **Commercial energy use** refers to apparent consumption, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transportation (see *About the data*). • **Net energy imports** are calculated as energy use less production, both measured in oil equivalents. A minus sign indicates that the country is a net exporter.

Data sources


IEA STATISTICS

ENERGY STATISTICS & BALANCES OF NON-OECD COUNTRIES

1995 - 1996

STATISTIQUES ET BILANS ENERGETIQUES DES PAYS NON-MEMBRES

Data on commercial energy production and use are primarily from IEA electronic files that are also published in its annual publications, *Energy Statistics and Balances of Non-OECD Countries*, *Energy Statistics of OECD Countries*, and *Energy Balances of OECD Countries*, and from the United Nations' *Energy Statistics Yearbook*.

3.8 Energy efficiency and emissions

	GDP per unit of energy use		Traditional fuel use		Carbon dioxide emissions					
	1995 $ per kg oil equivalent		% of total energy use		Total million metric tons		Per capita metric tons		kg per 1995 $ of GDP	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Albania	0.8	2.2	12.3	8.6	4.8	1.9	1.8	0.6	2.0	0.7
Algeria	2.5	1.8	2.7	2.0	66.2	94.3	3.5	3.3	2.1	2.2
Angola	..	0.9	47.1	59.5	5.3	5.1	0.8	0.5	..	0.9
Argentina	5.7	5.0	6.5	4.0	107.5	129.9	3.8	3.7	0.5	0.4
Armenia	5.2	1.7	..	..	..	3.7	..	1.0	..	1.2
Australia	3.3	3.7	2.1	3.8	202.8	306.6	13.8	16.7	0.9	0.8
Austria	7.1	8.7	1.4	2.8	52.2	59.3	6.9	7.4	0.3	0.3
Azerbaijan	..	0.3	..	..	..	30.0	..	4.0	..	8.5
Bangladesh	1.3	1.7	67.8	49.9	7.6	23.0	0.1	0.2	0.4	0.6
Belarus	..	0.8	..	0.8	..	61.7	..	6.0	..	3.2
Belgium	4.6	4.9	0.2	0.9	127.2	106.0	12.9	10.4	0.6	0.4
Benin	0.9	1.1	84.9	92.5	0.5	0.7	0.1	0.1	0.4	0.3
Bolivia	2.3	1.9	19.8	12.8	4.5	10.1	0.8	1.3	0.8	1.4
Bosnia and Herzegovina	..	..	..	9.9	..	3.1	..	1.4	..	..
Botswana	..	..	35.7	..	1.0	2.1	1.1	1.4	0.7	0.4
Brazil	4.7	4.4	41.2	27.5	183.4	273.4	1.5	1.7	0.4	0.4
Bulgaria	0.4	0.5	0.7	0.8	75.3	55.3	8.5	6.6	6.4	4.7
Burkina Faso	..	..	91.4	93.3	0.4	1.0	0.1	0.1	0.3	0.4
Burundi	..	..	92.7	88.8	0.1	0.2	0.0	0.0	0.2	0.2
Cambodia	..	..	71.2	75.3	0.3	0.5	0.0	0.0	..	0.2
Cameroon	1.7	1.7	69.4	77.3	3.9	3.5	0.4	0.3	0.6	0.4
Canada	2.1	2.5	0.6	0.6	420.9	409.4	17.1	13.7	1.0	0.7
Central African Republic	..	..	90.8	89.0	0.1	0.2	0.0	0.1	0.1	0.2
Chad	..	..	87.4	90.2	0.2	0.1	0.0	0.0	0.2	0.1
Chile	2.8	3.1	14.5	13.3	27.9	48.8	2.5	3.4	1.0	0.8
China	0.3	0.7	8.0	5.6	1,476.8	3,363.5	1.5	2.8	8.9	4.4
Hong Kong, China	10.0	12.0	0.9	0.3	16.3	23.1	3.2	3.7	0.3	0.2
Colombia	2.4	2.6	21.4	21.1	39.8	65.3	1.4	1.7	0.9	0.8
Congo, Dem. Rep.	1.0	0.5	79.5	83.9	3.5	2.3	0.1	0.1	0.4	0.4
Congo, Rep.	1.5	1.9	55.9	61.0	0.4	5.0	0.2	1.9	0.3	2.2
Costa Rica	3.7	4.0	40.4	12.7	2.5	4.7	1.1	1.4	0.4	0.5
Côte d'Ivoire	2.3	2.0	53.5	67.2	4.6	13.1	0.6	0.9	0.5	1.2
Croatia	..	2.8	..	3.0	..	17.5	..	3.7	..	0.9
Cuba	..	..	28.1	19.7	31.0	31.2	3.2	2.8	..	..
Czech Republic	..	1.3	..	0.5	..	126.7	..	12.3	..	2.4
Denmark	6.8	8.2	0.3	3.3	62.9	56.6	12.3	10.7	0.5	0.3
Dominican Republic	2.2	2.5	28.3	12.1	6.4	12.9	1.1	1.6	0.8	1.0
Ecuador	2.4	2.1	26.5	14.8	13.4	24.5	1.7	2.1	1.1	1.3
Egypt, Arab Rep.	1.8	1.6	5.0	3.3	45.2	97.9	1.1	1.7	1.5	1.6
El Salvador	2.9	2.4	50.3	42.9	2.1	4.0	0.5	0.7	0.3	0.4
Eritrea	..	..	..	..	..	..	..	..	..	..
Estonia	..	0.9	..	2.3	..	16.4	..	11.2	..	3.3
Ethiopia	0.4	0.4	92.4	90.1	1.8	3.4	0.0	0.1	0.4	0.5
Finland	3.7	4.1	3.8	5.1	54.9	59.2	11.5	11.5	0.6	0.5
France	6.1	6.1	1.3	1.0	482.7	361.8	9.0	6.2	0.4	0.2
Gabon	2.4	3.3	33.6	51.8	4.9	3.7	7.1	3.3	1.4	0.7
Gambia, The	..	..	79.7	81.2	0.2	0.2	0.2	0.2	0.7	0.6
Georgia	2.7	2.1	..	1.3	..	3.0	..	0.5	..	0.9
Germany	..	7.0	..	0.7	..	861.2	..	10.5	..	0.4
Ghana	1.0	1.0	68.2	79.0	2.4	4.0	0.2	0.2	0.6	0.6
Greece	5.7	4.8	2.8	1.5	51.7	80.6	5.4	7.7	0.6	0.7
Guatemala	2.9	2.9	53.1	59.9	4.5	6.8	0.7	0.7	0.4	0.4
Guinea	..	..	68.4	69.9	0.9	1.1	0.2	0.2	..	0.3
Guinea-Bissau	..	..	76.1	70.5	0.1	0.2	0.2	0.2	1.0	0.9
Haiti	1.5	1.4	82.4	80.3	0.8	1.1	0.1	0.1	0.2	0.4
Honduras	1.4	1.4	61.2	49.3	2.1	4.0	0.6	0.7	0.8	1.0

Energy efficiency and emissions 3.8

	GDP per unit of energy use		Traditional fuel use		Carbon dioxide emissions					
	1995 $ per kg oil equivalent		% of total energy use		Total million metric tons		Per capita metric tons		kg per 1995 $ of GDP	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Hungary	1.6	1.8	2.1	1.8	82.5	59.5	7.7	5.8	1.8	1.3
India	0.6	0.8	34.7	23.3	347.3	997.4	0.5	1.1	2.4	2.8
Indonesia	1.3	1.6	51.6	29.9	94.6	245.1	0.6	1.2	1.3	1.1
Iran, Islamic Rep.	1.4	*1.1*	1.6	0.8	116.1	266.7	3.0	4.4	2.1	*2.9*
Iraq	..	..	0.2	0.1	44.0	91.4	3.4	4.3	..	..
Ireland	4.0	5.9	0.1	0.2	25.2	34.9	7.4	9.6	0.7	0.5
Israel	5.1	5.6	0.0	..	21.1	52.3	5.4	9.2	0.5	0.6
Italy	6.0	6.8	0.7	1.9	371.9	403.2	6.6	7.0	0.5	0.4
Jamaica	1.3	1.1	6.2	8.0	8.4	10.1	4.0	4.0	2.7	2.4
Japan	9.3	10.5	0.1	0.5	920.4	1,167.7	7.9	9.3	0.3	0.2
Jordan	2.2	1.5	0.0	..	..	..	..	..	..	..
Kazakhstan	..	0.5	..	0.1	..	173.8	..	10.9	..	8.7
Kenya	0.6	0.7	75.4	76.1	6.2	6.8	0.4	0.2	1.1	0.7
Korea, Dem. Rep.	..	..	2.7	3.9	124.9	254.3	7.1	11.3	..	..
Korea, Rep.	3.1	3.0	5.7	0.7	125.2	408.1	3.3	9.0	0.9	0.8
Kuwait	2.4	*1.7*	0.0	..	..	..	..	..	..	..
Kyrgyz Republic	..	1.2	..	..	..	6.1	..	1.3	..	1.7
Lao PDR	..	..	86.6	85.1	0.2	0.3	0.1	0.1	..	0.2
Latvia	16.0	1.5	..	18.0	..	9.3	..	3.7	..	1.4
Lebanon	..	..	4.3	2.6	6.2	14.2	2.1	3.5	..	..
Lesotho	..	..	..	..	..	..	..	..	..	..
Libya	..	..	1.7	0.8	26.9	40.6	8.8	8.0	..	..
Lithuania	..	0.8	..	5.6	..	13.8	..	3.7	..	1.9
Macedonia, FYR	..	..	..	6.9	..	12.7	..	6.4	..	6.1
Madagascar	..	..	77.1	83.8	1.6	1.2	0.2	0.1	0.5	0.4
Malawi	..	..	89.1	86.8	0.7	0.7	0.1	0.1	0.7	0.5
Malaysia	2.9	2.3	14.4	6.6	28.0	119.1	2.0	5.6	0.9	1.3
Mali	..	..	85.2	87.4	0.4	0.5	0.1	0.0	0.2	0.2
Mauritania	..	..	0.7	..	0.6	2.9	0.4	1.2	0.8	2.6
Mauritius	..	..	44.1	41.6	0.6	1.7	0.6	1.5	0.3	0.4
Mexico	2.3	2.1	4.4	4.4	251.6	348.1	3.7	3.8	1.1	1.2
Moldova	..	0.6	..	*0.5*	..	12.1	..	2.8	..	4.2
Mongolia	..	..	14.0	3.6	6.8	8.9	4.1	3.6	*9.2*	9.1
Morocco	4.5	4.2	5.4	4.7	15.9	27.9	0.8	1.0	0.7	0.8
Mozambique	0.2	0.3	72.6	86.0	3.2	1.0	0.3	0.1	2.0	0.5
Myanmar	..	..	66.5	69.4	4.8	7.3	0.1	0.2	..	..
Namibia	..	..	..	..	..	..	..	..	..	..
Nepal	0.5	0.7	94.8	88.9	0.5	1.6	0.0	0.1	0.3	0.3
Netherlands	4.4	5.4	0.0	0.5	152.6	155.2	10.8	10.0	0.5	0.4
New Zealand	4.7	3.8	0.2	..	17.6	29.8	5.6	8.0	0.4	0.5
Nicaragua	1.3	1.0	50.4	45.8	2.0	2.9	0.7	0.6	1.0	1.2
Niger	..	..	78.0	79.6	0.6	1.1	0.1	0.1	0.3	0.6
Nigeria	0.4	0.4	63.7	56.6	68.1	83.3	1.0	0.7	3.0	2.8
Norway	5.1	6.7	0.8	1.1	90.4	67.0	22.1	15.3	0.9	0.4
Oman	2.8	2.6	0.0	..	5.9	15.1	5.3	7.0	1.5	*1.3*
Pakistan	1.0	1.1	27.2	20.2	31.6	94.3	0.4	0.8	1.2	1.5
Panama	2.8	3.6	26.4	19.4	3.5	6.7	1.8	2.5	0.7	0.8
Papua New Guinea	..	..	64.1	58.9	1.8	2.4	0.6	0.5	0.6	0.5
Paraguay	2.8	2.1	66.1	51.5	1.5	3.7	0.5	0.7	0.3	0.4
Peru	4.1	4.3	18.7	22.9	23.6	26.2	1.4	1.1	0.5	0.4
Philippines	2.7	2.1	35.8	30.5	36.5	63.2	0.8	0.9	0.6	0.8
Poland	0.9	1.2	0.4	1.1	456.2	356.8	12.8	9.2	4.2	2.8
Portugal	6.8	5.6	1.1	0.7	27.1	47.9	2.8	4.8	0.4	0.4
Puerto Rico	..	..	0.0	..	14.0	15.8	4.4	4.2	..	..
Romania	0.6	0.7	1.5	21.5	191.8	119.3	8.6	5.3	5.3	3.5
Russian Federation	0.5	0.5	..	1.1	..	1,579.5	..	10.7	..	4.7

3.8 Energy efficiency and emissions

	GDP per unit of energy use		Traditional fuel use		Carbon dioxide emissions					
	1995 $ per kg oil equivalent		% of total energy use		Total million metric tons		Per capita metric tons		kg per 1995 $ of GDP	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Rwanda	..	..	84.8	85.7	0.3	0.5	0.1	0.1	0.2	0.3
Saudi Arabia	3.0	1.4	0.0	..	130.7	267.8	14.0	13.8	1.2	2.1
Senegal	1.6	1.8	48.6	55.9	2.8	3.1	0.5	0.4	0.9	0.6
Sierra Leone	..	..	63.5	69.4	0.6	0.4	0.2	0.1	0.6	0.5
Singapore	4.6	3.8	0.0	..	30.1	65.8	13.2	21.6	1.1	0.7
Slovak Republic	..	1.1	..	0.5	..	39.6	..	7.4	..	2.1
Slovenia	..	3.1	..	0.8	..	13.0	..	6.5	..	0.7
South Africa	1.7	1.4	4.5	3.9	211.3	292.7	7.7	7.3	1.9	2.1
Spain	5.7	5.6	0.5	0.6	200.0	232.5	5.3	5.9	0.5	0.4
Sri Lanka	1.5	2.0	54.3	48.4	3.4	7.1	0.2	0.4	0.5	0.5
Sudan	0.5	0.7	76.4	76.4	3.3	3.5	0.2	0.1	0.7	0.4
Sweden	4.5	4.5	3.9	2.5	71.4	54.1	8.6	6.1	0.4	0.2
Switzerland	12.1	12.0	1.1	2.1	40.9	44.2	6.5	6.3	0.2	0.1
Syrian Arab Republic	1.7	1.2	0.1	..	19.3	44.3	2.2	3.1	2.1	2.6
Tajikistan	..	0.5	..	..	..	5.8	..	1.0	..	3.6
Tanzania	..	0.3	83.7	89.6	1.9	2.4	0.1	0.1	..	0.5
Thailand	2.3	2.2	48.3	32.7	40.0	205.4	0.9	3.4	0.8	1.2
Togo	..	..	38.3	73.1	0.6	0.8	0.2	0.2	0.5	0.5
Trinidad and Tobago	1.3	0.7	1.8	1.0	16.7	22.2	15.4	17.1	3.4	4.0
Tunisia	2.7	2.9	15.4	12.9	9.4	16.2	1.5	1.8	0.9	0.8
Turkey	2.8	2.8	18.0	3.1	76.3	178.3	1.7	2.8	0.9	1.0
Turkmenistan	..	0.3	..	..	..	34.2	..	7.4	..	8.2
Uganda	..	..	87.2	89.2	0.6	1.0	0.1	0.1	*0.2*	0.2
Ukraine	..	0.5	..	0.4	..	397.3	..	7.8	..	5.1
United Arab Emirates	..	..	0.0	..	36.3	81.8	34.8	33.3	..	..
United Kingdom	4.0	4.8	0.0	1.1	583.8	557.0	10.4	9.5	0.7	0.5
United States	2.7	3.4	1.2	4.2	4,575.4	5,301.0	20.1	20.0	0.9	0.7
Uruguay	5.8	6.4	20.4	26.7	5.8	5.6	2.0	1.7	0.4	0.3
Uzbekistan	..	0.5	..	..	..	95.0	..	4.1	..	4.2
Venezuela	1.7	1.4	1.0	1.2	89.6	144.5	5.9	6.5	1.5	1.9
Vietnam	..	0.7	53.5	49.1	16.8	37.6	0.3	0.5	..	1.7
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	1.3	0.0	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	100.0	..	..	..	..	..	..	..
Zambia	0.7	0.6	54.6	71.2	3.5	2.4	0.6	0.3	1.1	0.7
Zimbabwe	0.7	0.7	33.6	27.4	9.6	18.4	1.4	1.6	2.1	2.4
World	.. w	3.2 w	7.1 w	6.9 w	13,640.7 t	22,653.9 t	3.4 w	4.0 w	0.8 w	0.7 w
Low income	..	0.8	50.1	38.0	559.4	1,448.1	0.4	0.7	1.7	2.1
Middle income	..	1.3	12.3	7.3	4,247.0	10,068.9	2.2	3.6	1.7	2.1
Lower middle income	..	0.9	12.9	7.2	2,509.0	7,512.7	1.6	3.4	3.0	3.1
Upper middle income	..	2.4	11.5	7.5	1,738.0	2,556.2	4.3	4.5	1.1	1.1
Low & middle income	..	1.2	18.8	12.0	4,806.4	11,517.0	1.5	2.4	1.7	2.1
East Asia & Pacific	..	1.0	15.8	11.6	1,833.3	4,309.5	1.3	2.5	4.3	2.9
Europe & Central Asia	..	0.8	3.5	2.1	886.9	3,412.7	..	7.4	..	3.4
Latin America & Carib.	..	3.2	20.3	15.6	848.5	1,209.1	2.4	2.5	0.6	0.7
Middle East & N. Africa	..	*1.6*	2.0	1.2	494.6	988.6	3.0	3.9	1.5	1.8
South Asia	..	0.9	37.5	25.6	392.4	1,125.1	0.4	0.9	1.9	2.3
Sub-Saharan Africa	..	0.9	46.6	47.4	350.7	472.1	0.9	0.8	1.6	1.5
High income	..	5.0	1.0	2.5	8,834.4	11,136.9	11.9	12.1	0.6	0.5
Europe EMU	5.6	6.3	0.9	1.1	1,504.4	2,329.5	7.6	8.0	0.5	0.3

Energy efficiency and emissions 3.8

About the data

The ratio of real GDP to energy use provides a measure of energy efficiency. Differences in this ratio over time and across countries are influenced by structural changes in the economy, changes in the energy efficiency of particular sectors of the economy, and differences in fuel mixes.

For traditional fuels, fuelwood and charcoal consumption estimates are calculated by the Food and Agriculture Organization (FAO) based on population data and country-specific per capita consumption figures. Estimates of bagasse consumption are based on sugar production data.

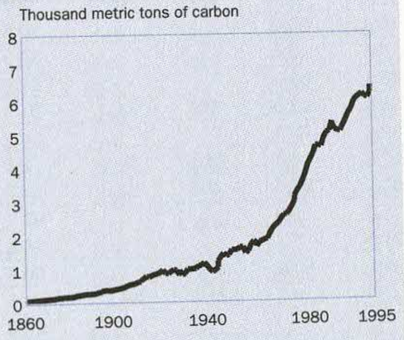
Carbon dioxide (CO_2) emissions, largely a by-product of energy production and use (see table 3.7), account for the largest share of greenhouse gases, which are associated with global warming. Anthropogenic CO_2 emissions result primarily from fossil fuel combustion and cement manufacturing. In combustion, different fossil fuels release different amounts of CO_2 for the same level of energy use. Burning oil releases about 50 percent more CO_2 than burning natural gas, and burning coal release about twice as much. During cement manufacturing about 0.5 metric ton of CO_2 is released for each ton of cement produced.

The Carbon Dioxide Information Analysis Center (CDIAC), sponsored by the U.S. Department of Energy, calculates annual anthropogenic emissions of CO_2. These calculations are derived from data on fossil fuel consumption, based on the World Energy Data Set maintained by the United Nations Statistical Division, and from data on world cement manufacturing, based on the Cement Manufacturing Data Set maintained by the U.S. Bureau of Mines. Emissions of CO_2 are often calculated and reported in terms of their content of elemental carbon. For this table these values were converted to the actual mass of CO_2 by multiplying the carbon mass by 3.664 (the ratio of the mass of carbon to that of CO_2).

Although the estimates of global CO_2 emissions are probably within 10 percent of actual emissions (as calculated from global average fuel chemistry and use), country estimates may have larger error bounds. Trends estimated from a consistent time series tend to be more accurate than individual values. Each year the CDIAC recalculates the entire time series from 1950 to the present, incorporating its most recent findings and the latest corrections to its database. Estimates do not include fuels supplied to ships and aircraft engaged in international transportation because of the difficulty of apportioning these fuels among the countries benefiting from that transport.

Figure 3.8a

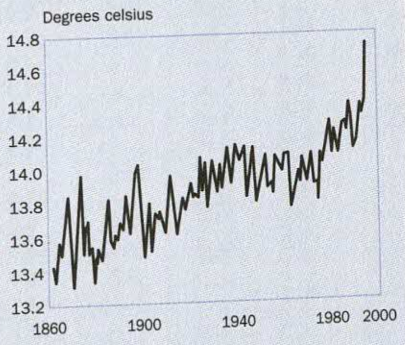
Historical trends show accelerating growth in global CO_2 emissions . . .



Note: Data refer to the carbon content of carbon dioxide emissions from fossil fuel burning, cement manufacture, and gas flaring.
Source: CDIAC.

Figure 3.8b

. . . and a rising average temperature at the earth's surface



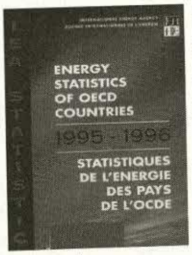
Note: Data for 1998 are preliminary.
Source: Brown, Renner, Flavin, and others 1998, based on data from Goddard Institute for Space Studies.

Since record-keeping began in 1866, the 13 warmest years have occurred since 1979, and the four warmest since 1990.

Definitions

- **GDP per unit of energy use** is the U.S. dollar estimate of real GDP (at 1995 prices) per kilogram of oil equivalent of commercial energy use. • **Traditional fuel use** includes estimates of the consumption of fuelwood, charcoal, bagasse, and animal and vegetable wastes. Total energy use comprises commercial energy use (see table 3.7) and traditional fuel use. • **Carbon dioxide emissions** are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

Data sources


ENERGY STATISTICS OF OECD COUNTRIES
1995 - 1996
STATISTIQUES DE L'ENERGIE DES PAYS DE L'OCDE

Underlying data on commercial energy production and use are from International Energy Agency (IEA) and United Nations sources. Data on CO_2 emissions are from the Carbon Dioxide Information Analysis Center, Environmental Sciences Division, Oak Ridge National Laboratory, in the U.S. state of Tennessee. Data on traditional fuel are from the World Resources Institute's *World Resources*, the United Nations' *Energy Statistics Yearbook*, and FAO electronic files.

3.9 Sources of electricity

	Electricity production billion kwh		Sources of electricity: Hydropower %		Coal %		Oil %		Gas %		Nuclear power %	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Albania	3.7	5.9	79.4	96.6	..	..	20.6	3.4	..	..	..	..
Algeria	7.1	20.7	3.6	0.7	..	..	12.2	3.6	84.1	95.7	..	..
Angola	0.7	1.0	88.1	90.0	..	..	11.9	10.0	..	..	..	..
Argentina	39.7	69.8	38.1	32.9	2.5	2.2	31.9	5.4	21.0	48.3	5.9	10.7
Armenia	13.0	6.2	12.0	25.3	..	..	54.8	2.0	..	35.3	33.2	37.4
Australia	95.2	177.0	13.6	8.7	73.3	78.9	5.4	1.6	7.3	9.0	..	..
Austria	41.6	53.5	69.1	64.0	7.0	11.5	14.0	3.7	9.2	17.5	..	..
Azerbaijan	15.0	17.1	7.3	9.0	..	..	92.7	0.5	..	90.5	..	..
Bangladesh	2.4	11.5	24.8	6.4	..	..	26.6	6.5	48.6	87.1	..	..
Belarus	34.1	23.7	0.1	0.1	..	..	99.9	29.1	..	70.8	..	..
Belgium	53.1	75.2	0.5	0.3	29.4	24.2	34.7	1.7	11.2	14.6	23.6	57.6
Benin	0.0	0.0	..	..	..	..	100.0	100.0	..	..	..	..
Bolivia	1.6	3.2	68.2	63.0	..	..	10.3	6.2	18.4	29.6	..	..
Bosnia and Herzegovina	..	2.2	..	64.5	..	35.5	..	..	..	..	..	..
Botswana	..	..	..	..	..	..	..	..	..	..	..	..
Brazil	139.4	289.8	92.5	91.7	2.0	1.6	3.8	3.1	..	0.2	..	0.8
Bulgaria	34.8	41.5	10.7	4.0	49.2	41.9	22.5	3.2	..	7.2	17.7	43.6
Burkina Faso	..	..	..	..	..	..	..	..	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	1.5	2.9	93.9	98.9	..	..	6.1	1.1	..	..	..	..
Canada	373.3	570.6	67.3	62.4	16.0	16.2	3.7	1.6	2.5	2.9	10.2	16.3
Central African Republic	..	..	..	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	11.8	30.8	62.5	54.8	14.9	35.1	19.1	8.4	1.2	1.0	..	..
China	300.6	1,080.0	19.4	17.4	59.3	75.0	21.1	6.0	0.2	0.2	..	1.3
Hong Kong, China	12.6	28.4	..	..	0.0	98.4	100.0	1.6	..	..	..	..
Colombia	20.6	44.6	70.0	79.1	9.7	6.9	2.1	0.5	17.6	12.8	..	..
Congo, Dem. Rep.	4.4	6.3	95.5	97.9	..	..	4.5	2.1	..	..	..	..
Congo, Rep.	0.2	0.4	62.2	98.6	..	..	35.9	0.7	1.9	0.7	..	..
Costa Rica	2.2	4.9	95.2	85.9	..	..	4.8	13.9	..	..	..	..
Côte d'Ivoire	1.7	3.0	77.6	62.1	..	..	22.4	37.9	..	..	..	..
Croatia	..	11.1	..	59.4	..	2.7	..	27.7	..	10.1	..	..
Cuba	9.9	13.2	1.0	0.7	..	..	89.6	92.2	..	0.1	..	..
Czech Republic	52.7	63.8	4.6	3.1	84.8	73.3	9.6	1.1	1.1	1.2	..	20.1
Denmark	26.8	53.6	0.1	0.0	81.8	74.0	18.0	10.8	..	10.7	..	..
Dominican Republic	3.3	6.8	18.8	27.1	..	4.3	78.8	68.1	..	..	..	..
Ecuador	3.4	9.4	25.9	68.1	..	..	74.1	31.9	..	..	..	..
Egypt, Arab Rep.	18.9	57.6	51.8	18.8	..	..	27.7	37.1	20.5	44.1	..	..
El Salvador	1.6	3.5	61.9	53.4	..	..	5.2	26.6	..	..	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	18.9	9.1	..	0.0	..	96.6	100.0	1.1	..	2.2	..	..
Ethiopia	0.7	1.3	70.2	87.0	..	..	27.6	7.8	..	..	..	..
Finland	40.7	69.4	25.1	17.1	42.6	31.8	10.8	1.9	4.2	12.3	17.2	28.1
France	256.9	508.1	26.9	12.8	27.2	6.1	18.9	1.5	2.7	0.8	23.8	78.2
Gabon	0.5	1.0	49.1	76.4	..	..	50.9	12.9	..	10.7	..	..
Gambia, The	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	14.7	7.2	43.8	85.1	..	..	56.2	1.0	..	13.9	..	..
Germany	466.3	550.6	4.1	4.0	62.9	55.0	5.7	1.4	14.2	8.7	11.9	29.1
Ghana	5.3	6.0	99.2	99.9	..	..	0.8	0.1	..	..	..	..
Greece	22.7	42.3	15.0	10.3	44.8	69.3	40.1	20.2	..	0.2	..	..
Guatemala	1.8	4.3	12.9	74.3	..	..	70.3	20.6	..	..	..	..
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	0.3	0.6	70.1	43.5	..	..	26.1	53.3	..	..	..	..
Honduras	0.9	2.8	84.0	99.5	..	..	16.0	0.5	..	..	..	..

Sources of electricity 3.9

	Electricity production		Sources of electricity									
	billion kwh		Hydropower %		Coal %		Oil %		Gas %		Nuclear power %	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Hungary	23.9	35.1	0.5	0.6	50.2	28.3	15.0	12.6	34.3	18.1	..	40.4
India	119.3	435.1	39.0	15.9	49.9	73.2	7.7	2.8	0.8	6.2	2.5	1.9
Indonesia	8.4	67.1	16.0	13.3	..	25.9	84.0	25.4	..	32.0	..	..
Iran, Islamic Rep.	22.4	90.9	25.1	8.1	..	..	50.1	37.1	24.8	54.7	..	..
Iraq	11.4	29.0	6.1	2.0	..	..	93.9	98.0	..	..	..	..
Ireland	10.6	18.9	7.9	3.8	16.4	48.4	60.4	14.2	15.2	33.2	..	..
Israel	12.5	32.5	..	0.2	*17.9*	68.9	100.0	30.9	..	..	..	..
Italy	183.5	239.5	24.7	17.6	9.9	10.6	57.0	48.9	5.0	21.0	1.2	..
Jamaica	1.5	6.0	8.3	2.1	..	..	87.9	93.3	..	..	..	..
Japan	572.5	1,003.2	15.4	8.0	9.6	18.2	46.2	21.0	14.2	20.2	14.4	30.1
Jordan	1.1	6.1	..	0.4	..	..	100.0	87.6	..	12.0	..	..
Kazakhstan	61.5	58.7	9.3	12.5	..	72.0	90.7	7.3	..	8.2	..	..
Kenya	1.5	4.0	71.1	81.6	..	..	28.9	8.8	..	..	..	..
Korea, Dem. Rep.	35.0	35.0	64.3	64.3	35.7	35.7	..	..	..	..	..	..
Korea, Rep.	37.2	223.1	5.3	1.1	6.7	35.4	78.7	18.2	..	12.1	9.3	33.1
Kuwait	9.4	25.5	..	..	..	..	37.2	21.7	62.8	78.3	..	..
Kyrgyz Republic	9.2	13.8	53.1	89.1	..	6.6	46.9	4.3	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	4.7	3.1	64.9	59.5	..	3.1	35.1	20.6	..	16.8	..	..
Lebanon	2.8	7.0	30.9	11.5	..	..	69.1	88.5	..	..	..	..
Lesotho	..	..	..	..	..	..	..	..	..	..	..	..
Libya	4.8	18.2	..	..	..	..	100.0	100.0	..	..	..	..
Lithuania	11.7	16.2	4.0	2.0	..	..	96.0	8.1	..	4.1	..	85.8
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	..	..	..	..	..	..	..	..	..	..	..	..
Malawi	..	..	..	..	..	..	..	..	..	..	..	..
Malaysia	10.0	51.4	13.9	10.1	..	6.4	84.7	12.3	1.3	71.2	..	..
Mali	..	..	..	..	..	..	..	..	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	..	..	..	..	..	..	..	..	..	..	..	..
Mexico	67.0	162.5	25.2	19.3	*0.0*	10.9	57.9	50.1	15.5	11.3	..	4.8
Moldova	15.4	6.1	2.6	6.0	..	22.2	97.4	6.3	..	65.5	..	..
Mongolia	..	..	..	..	..	..	..	..	..	..	..	..
Morocco	5.2	12.4	28.9	15.7	19.5	44.9	51.6	39.4	..	..	..	..
Mozambique	14.0	0.6	96.8	8.4	..	12.4	3.2	65.5	..	13.7	..	..
Myanmar	1.5	4.3	53.5	38.3	2.0	0.1	31.3	15.9	13.2	45.7	..	..
Namibia	..	..	..	..	..	..	..	..	..	..	..	..
Nepal	0.2	1.2	82.3	90.2	..	..	17.7	9.8	..	..	..	..
Netherlands	64.8	85.0	..	0.1	13.7	31.6	38.4	4.6	39.8	55.6	6.5	4.9
New Zealand	22.6	36.2	83.6	71.2	1.9	3.0	0.2	0.0	7.5	17.8	..	..
Nicaragua	1.1	1.9	51.3	22.6	..	..	45.3	60.6	..	..	..	..
Niger	..	..	..	..	..	..	..	..	..	..	..	..
Nigeria	7.1	15.0	39.0	36.7	0.4	..	45.1	26.1	15.5	37.2	..	..
Norway	83.8	104.5	99.8	99.2	0.0	0.2	0.1	..	..	0.3	..	..
Oman	0.8	6.8	..	..	..	..	..	18.2	100.0	81.8	..	..
Pakistan	15.0	57.0	58.2	40.7	0.2	0.8	1.1	30.8	40.5	26.8	0.0	0.8
Panama	2.0	3.9	49.4	61.7	..	..	48.4	37.4	..	..	..	..
Papua New Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Paraguay	0.8	48.2	80.0	99.7	..	..	13.4	0.1	..	..	..	..
Peru	10.0	17.3	69.8	77.1	..	..	27.4	20.9	1.7	1.3	..	..
Philippines	18.0	36.7	19.6	19.3	1.0	13.2	67.9	49.6	..	0.1	..	..
Poland	120.9	141.2	1.9	1.4	94.7	96.8	2.9	1.2	0.1	0.3	..	..
Portugal	15.2	34.4	52.7	42.9	2.3	36.6	42.9	17.5	..	..	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	67.5	61.4	18.7	25.7	31.4	33.9	9.6	10.9	38.2	27.2	..	2.3
Russian Federation	804.9	846.3	16.1	18.2	..	18.5	77.2	9.4	..	40.4	6.7	12.9

3.9 Sources of electricity

	Electricity production billion kwh		Sources of electricity Hydropower %		Coal %		Oil %		Gas %		Nuclear power %	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Rwanda	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	20.5	97.8	..	..	..	..	58.5	57.1	41.5	42.9	..	..
Senegal	0.6	1.2	..	..	..	..	100.0	88.1	..	11.9	..	..
Sierra Leone	..	..	..	..	..	..	..	..	..	..	..	..
Singapore	7.0	24.1	..	..	..	..	100.0	78.7	..	18.6	..	..
Slovak Republic	20.0	25.0	11.3	17.2	37.9	23.7	17.9	4.9	10.2	9.3	22.7	45.0
Slovenia	8.0	12.8	42.3	28.8	51.6	32.8	3.9	2.7	2.2	..	3.4	35.7
South Africa	99.0	198.3	1.0	0.7	99.0	93.2	..	..	..	..	..	5.9
Spain	109.2	173.4	27.1	23.0	30.0	31.5	35.2	8.0	2.7	3.9	4.7	32.5
Sri Lanka	1.7	4.5	88.7	71.8	..	..	11.3	28.2	..	..	..	..
Sudan	0.8	2.1	70.0	52.1	..	..	30.0	47.9	..	..	..	..
Sweden	96.3	139.6	61.1	36.9	0.2	3.0	10.4	5.2	..	0.3	27.5	52.5
Switzerland	48.2	55.6	68.1	51.0	0.1	0.0	1.0	0.5	0.6	1.2	29.8	45.2
Syrian Arab Republic	4.0	17.0	64.7	40.8	..	..	31.9	29.1	3.4	30.0	..	..
Tajikistan	13.6	15.0	93.4	98.8	..	..	6.6	1.2	..	..	..	..
Tanzania	0.8	2.0	86.4	87.8	..	..	13.6	12.2	..	..	..	..
Thailand	14.4	87.5	8.8	8.4	9.8	20.0	81.4	29.3	*9.9*	42.0	..	..
Togo	..	..	..	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	2.0	4.5	..	..	..	..	2.3	..	96.5	99.3	..	..
Tunisia	2.9	7.5	0.8	0.9	..	..	64.5	14.2	34.7	85.0	..	..
Turkey	23.1	94.9	49.0	42.7	25.8	32.1	25.2	6.9	..	18.1	..	..
Turkmenistan	6.7	10.1	0.1	0.0	..	..	99.9	..	..	100.0	..	..
Uganda	..	..	..	..	..	..	..	..	..	..	..	..
Ukraine	236.0	181.7	5.7	4.9	..	28.9	88.3	3.8	..	18.7	6.0	43.8
United Arab Emirates	6.3	19.7	..	..	..	..	44.8	17.1	55.2	82.9	..	..
United Kingdom	284.1	346.3	1.4	1.0	73.2	42.4	11.7	4.0	0.7	23.6	13.0	27.3
United States	2,427.3	3,652.0	11.5	9.6	51.2	52.7	10.8	2.6	15.3	13.2	11.0	19.6
Uruguay	3.4	6.7	67.9	86.5	..	..	31.8	12.6	..	..	..	..
Uzbekistan	33.9	45.4	14.6	14.4	..	4.0	85.4	11.2	..	70.5	..	..
Venezuela	36.9	75.4	39.6	71.4	..	..	14.5	2.5	45.9	26.1	..	..
Vietnam	3.6	16.9	41.8	0.0	39.9	14.0	18.3	8.6	*0.4*	77.3	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	0.5	2.4	..	..	..	..	100.0	100.0	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	38.1	..	30.2	..	63.7	..	2.4	..	3.7	..	..
Zambia	9.5	7.8	98.8	99.5	0.7	0.5	0.5	0.0	..	..	..	..
Zimbabwe	4.3	7.9	87.6	29.4	11.8	70.6	0.6	..	..	..	..	..
World	**8,227.3 s**	**13,621.4 s**	**20.8 w**	**18.4 w**	**33.1 w**	**38.4 w**	**28.2 w**	**9.2 w**	**8.8 w**	**14.8 w**	**8.7 w**	**17.8 w**
Low income	274.4	671.6	46.9	26.5	22.5	49.1	24.5	6.9	3.5	15.6	2.7	1.7
Middle income	2,513.6	4,447.3	20.9	23.8	20.8	37.1	50.5	13.1	4.3	18.5	3.2	6.8
Lower middle income	1,813.5	3,040.6	17.5	19.7	12.9	39.1	62.6	12.3	2.6	20.6	4.1	7.8
Upper middle income	700.2	1,406.7	29.6	32.7	41.2	32.8	19.1	14.7	8.5	13.9	1.0	4.8
Low & middle income	2,788.1	5,118.9	23.4	24.1	20.9	38.7	47.9	12.3	4.2	18.1	3.2	6.2
East Asia & Pacific	391.6	1,378.8	23.1	17.5	49.5	63.0	26.6	9.7	0.3	8.1	..	1.0
Europe & Central Asia	1,639.9	1,780.0	13.5	17.3	13.6	31.3	65.4	7.5	2.2	28.8	5.1	14.8
Latin America & Carib.	361.0	810.3	59.8	64.1	2.1	4.7	24.2	16.6	11.6	10.4	0.6	2.2
Middle East & N. Africa	104.6	379.8	20.4	7.5	1.0	1.5	52.3	49.0	26.3	42.0	..	..
South Asia	138.5	509.2	41.5	19.1	43.0	62.6	7.4	6.2	5.9	10.3	2.2	1.7
Sub-Saharan Africa	152.6	260.8	30.4	16.5	64.6	73.1	4.3	3.3	0.7	2.3	..	4.5
High income	5,439.3	8,502.5	19.4	14.9	39.4	38.3	18.1	7.4	11.2	12.8	11.5	24.7
Europe EMU	1,242.9	1,808.5	17.0	12.8	37.2	28.2	22.9	9.1	10.0	10.6	11.9	37.6

Sources of electricity 3.9

About the data

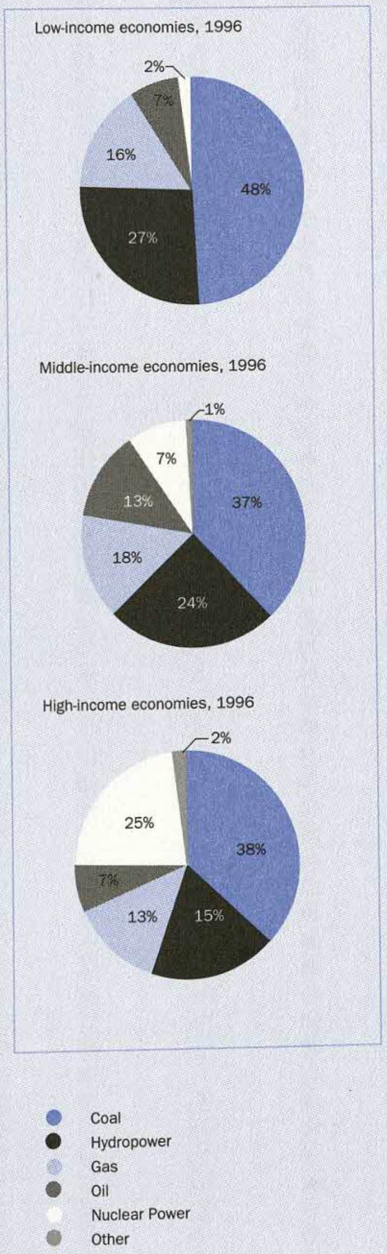
Use of energy in general, and access to electricity in particular, are important in improving people's standard of living. But electricity generation also can damage the environment. Whether such damage occurs depends largely on how electricity is generated. For example, burning coal releases twice as much carbon dioxide—a major contributor to global warming—as does burning an equivalent amount of natural gas (see *About the data* for table 3.8). Nuclear energy does not generate carbon dioxide emissions, but it produces other dangerous waste products. The table provides information on electricity production by source.

The International Energy Agency (IEA) compiles data on energy inputs used to generate electricity. IEA data for non-OECD countries are based on national energy data that have been adjusted to conform with annual questionnaires completed by OECD member governments. In addition, estimates are sometimes made to complete major aggregates from which key data are missing, and adjustments are made to compensate for differences in definitions. The IEA makes these estimates in consultation with national statistical offices, oil companies, electricity utilities, and national energy experts.

The IEA occasionally revises its time series to reflect political changes. Since 1990, for example, it has constructed energy statistics for countries of the former Soviet Union. In addition, energy statistics for other countries have undergone continuous changes in coverage or methodology as more detailed energy accounts have become available in recent years. Breaks in series are therefore unavoidable.

Figure 3.9

Coal still dominates in global electricity generation

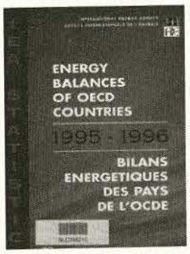


Note: Electricity generation from other sources in low-income economies amounts to less than 1 percent.
Source: Table 3.9.

Definitions

- **Electricity production** is measured at the terminals of all alternator sets in a station. In addition to hydropower, coal, oil, gas, and nuclear power generation, it covers generation by geothermal, solar, wind, and tide and wave energy, as well as that from combustible renewables and waste. Production includes the output of electricity plants that are designed to produce electricity only as well as that of combined heat and power plants. • **Sources of electricity** refer to the inputs used to generate electricity: hydropower, coal, oil, gas, and nuclear power. Hydropower refers to electricity produced by hydroelectric power plants, oil refers to crude oil and petroleum products, gas refers to natural gas but excludes natural gas liquids, and nuclear power refers to electricity produced by nuclear power plants. Shares may not sum to 100 percent because other sources of generated electricity (such as geothermal, solar, and wind) are not shown.

Data sources



ENERGY BALANCES OF OECD COUNTRIES
1995 - 1996
BILANS ENERGETIQUES DES PAYS DE L'OCDE

Data on electricity production are from the IEA's electronic files and its annual publications, *Energy Statistics and Balances of Non-OECD Countries*, *Energy Statistics of OECD Countries*, and *Energy Balances of OECD Countries*.

3.10 Urbanization

	Urban population				Population in urban agglomerations of more than one million			Population in the largest city		Access to sanitation in urban areas	
	millions		% of total population		% of total population			% of urban population		% of urban population	
	1980	1997	1980	1997	1980	1995	2015	1980	1995	1982	1995
Albania	0.9	1.3	34	38	0	0	..	..	..	..	*97*
Algeria	8.1	16.8	43	57	11	13	15	25	24	95	..
Angola	1.5	3.8	21	32	13	20	29	63	61	*27*	71
Argentina	23.3	31.6	83	89	35	39	36	43	39	*76*	80
Armenia	2.0	2.6	66	69	34	35	41	51	50	..	..
Australia	12.6	15.7	86	85	47	58	58	26	23	..	..
Austria	4.9	5.2	65	64	27	26	27	42	40	..	..
Azerbaijan	3.3	4.3	53	56	26	25	28	48	44	..	..
Bangladesh	9.8	24.1	11	19	5	9	15	33	39	20	41
Belarus	5.4	7.4	56	72	14	17	20	24	24	..	..
Belgium	9.4	9.9	95	97	12	11	11	13	11	..	..
Benin	0.9	2.3	27	40	0	0	..	..	..	*45*	60
Bolivia	2.4	4.8	46	62	14	17	19	30	28	*51*	*77*
Bosnia and Herzegovina	1.5	1.0	36	42	..	..	..	..	..	..	..
Botswana	0.1	1.0	15	65	0	0	..	..	..	*79*	91
Brazil	80.5	130.1	66	80	27	33	34	16	13	33	74
Bulgaria	5.4	5.7	61	69	12	16	20	20	21	..	..
Burkina Faso	0.6	1.8	9	17	0	0	..	44	52	*38*	..
Burundi	0.2	0.5	4	8	0	0	..	..	..	*90*	..
Cambodia	0.8	2.3	12	22	..	..	..	..	..	..	..
Cameroon	2.7	6.5	31	46	6	10	14	19	22	..	..
Canada	18.6	23.3	76	77	29	36	35	16	19	..	..
Central African Republic	0.8	1.4	35	40	0	0	..	..	..	*36*	..
Chad	0.8	1.6	19	23	0	0	..	40	55	..	*74*
Chile	9.0	12.3	81	84	33	36	35	41	41	*79*	95
China	192.3	390.7	20	32	8	11	14	6	4	..	68
Hong Kong, China	4.6	6.2	91	95	91	91	79	100	99	..	..
Colombia	18.2	29.4	64	74	21	27	27	20	22	*96*	70
Congo, Dem. Rep.	7.8	13.7	29	29	..	*10*	..	28	34	8	53
Congo, Rep.	0.7	1.6	41	60	..	39	..	67	67	17	..
Costa Rica	1.0	1.7	43	50	0	0	..	61	55	*100*	100
Côte d'Ivoire	2.9	6.3	35	45	15	21	35	44	48	13	..
Croatia	2.3	2.7	50	57	0	0	..	28	37	*72*	71
Cuba	6.6	8.5	68	77	20	20	22	29	27	..	92
Czech Republic	6.5	6.8	64	66	12	12	13	18	18	..	..
Denmark	4.3	4.5	84	85	27	25	25	32	30	..	..
Dominican Republic	2.9	5.1	51	63	25	33	36	50	65	*72*	89
Ecuador	3.7	7.2	47	60	14	26	30	30	27	*79*	70
Egypt, Arab Rep.	17.9	27.2	44	45	23	23	25	38	37	95	*95*
El Salvador	1.9	2.7	42	46	..	22	..	39	48	*89*	89
Eritrea	0.3	0.7	14	18	..	..	..	..	..	..	*12*
Estonia	1.0	1.1	70	74	0	0	..	..	..	..	..
Ethiopia	4.0	9.7	11	16	3	4	7	30	28	..	..
Finland	2.9	3.3	60	64	0	0	..	22	33	100	100
France	39.5	44.0	73	75	21	21	20	23	22	..	..
Gabon	0.2	0.6	34	52	0	0	..	..	..	..	..
Gambia, The	0.1	0.4	20	30	0	0	..	..	..	..	..
Georgia	2.6	3.2	52	59	22	25	31	42	42	..	..
Germany	64.7	71.3	83	87	38	41	43	10	9	..	..
Ghana	3.4	6.6	31	37	9	10	14	30	27	*47*	*75*
Greece	5.6	6.3	58	60	31	35	38	54	50	..	..
Guatemala	2.6	4.2	37	40	..	21	..	29	57	*73*	91
Guinea	0.9	2.1	19	31	12	23	38	65	81	54	24
Guinea-Bissau	0.1	0.3	17	23	0	0	..	..	..	21	32
Haiti	1.3	2.5	24	33	13	18	26	55	64	*42*	43
Honduras	1.2	2.7	35	45	0	0	..	33	40	*22*	91

Urbanization 3.10

	Urban population				Population in urban agglomerations of more than one million			Population in the largest city		Access to sanitation in urban areas	
	millions		% of total population		% of total population			% of urban population		% of urban population	
	1980	1997	1980	1997	1980	1995	2015	1980	1995	1982	1995
Hungary	6.1	6.7	57	66	19	20	21	34	31	..	..
India	158.8	264.1	23	27	6	10	12	5	6	25	..
Indonesia	32.9	74.8	22	37	7	13	16	18	13	*30*	88
Iran, Islamic Rep.	19.4	36.6	50	60	13	22	26	26	20	90	86
Iraq	8.5	16.5	66	75	26	22	23	39	28	30	*85*
Ireland	1.9	2.1	55	58	0	0	..	48	44	..	..
Israel	3.4	5.3	89	91	37	35	32	41	39	..	100
Italy	37.6	38.4	67	67	26	20	21	14	11	..	..
Jamaica	1.0	1.4	47	55	0	0	..	..	..	*92*	99
Japan	89.0	98.9	76	78	34	37	39	25	28	..	..
Jordan	1.3	3.2	60	73	29	28	34	49	39	91	..
Kazakhstan	..	9.6	54	60	6	8	10	..	13	..	..
Kenya	2.7	8.7	16	30	5	8	13	32	23	*75*	..
Korea, Dem. Rep.	10.1	14.2	57	62	10	11	13	18	18	*100*	100
Korea, Rep.	21.7	38.3	57	83	37	52	54	2	2	*100*	100
Kuwait	1.2	1.8	90	97	60	69	57	67	71	100	100
Kyrgyz Republic	1.4	1.8	38	39	0	0	..	..	..	78	..
Lao PDR	0.4	1.1	13	22	0	0	..	..	..	..	..
Latvia	1.7	1.8	68	73	0	0	..	49	50	..	90
Lebanon	2.2	3.7	74	88	..	*46*	..	55	52	94	..
Lesotho	0.2	0.5	13	26	0	0	..	..	..	22	76
Libya	2.1	4.5	69	86	26	31	31	38	40	*100*	90
Lithuania	2.1	2.7	61	73	0	0	..	..	..	..	..
Macedonia, FYR	1.0	1.2	53	61	0	0	..	..	..	62	..
Madagascar	1.6	3.9	18	28	0	0	..	29	25	*8*	..
Malawi	0.6	1.5	9	14	0	0	..	..	..	*88*	94
Malaysia	5.8	11.9	42	55	7	6	7	16	11	..	94
Mali	1.2	2.9	19	28	0	0	..	40	35	90	*61*
Mauritania	0.4	1.3	27	54	0	0	..	..	..	7	*44*
Mauritius	0.4	0.5	42	41	0	0	..	..	..	100	..
Mexico	44.8	69.6	66	74	27	28	26	31	25	*77*	93
Moldova	1.6	2.3	40	53	0	0	..	..	..	..	96
Mongolia	0.9	1.6	52	62	0	0	..	..	..	..	*100*
Morocco	8.0	14.5	41	53	11	18	22	26	23	85	97
Mozambique	1.6	6.0	13	36	6	14	25	47	41	51	68
Myanmar	8.1	11.7	24	27	7	9	14	27	35	*34*	*56*
Namibia	0.2	0.6	23	38	0	0	..	..	..	..	..
Nepal	0.9	2.4	7	11	0	0	..	..	..	5	74
Netherlands	12.5	13.9	88	89	7	14	14	8	8	..	..
New Zealand	2.6	3.2	83	86	0	0	..	30	31	..	..
Nicaragua	1.6	3.0	53	63	22	27	32	41	41	*35*	88
Niger	0.7	1.9	13	19	0	0	..	..	..	20	..
Nigeria	19.1	48.7	27	41	6	11	15	23	23	*30*	82
Norway	2.9	3.2	71	74	0	0	..	..	..	..	100
Oman	0.3	1.8	32	79	0	0	..	..	..	60	..
Pakistan	23.2	45.4	28	35	11	19	25	22	23	48	75
Panama	1.0	1.5	50	56	0	0	..	62	66	*99*	99
Papua New Guinea	0.4	0.7	13	17	0	0	..	..	..	*51*	..
Paraguay	1.3	2.7	42	54	0	0	..	52	43	*66*	20
Peru	11.2	17.5	65	72	26	32	33	39	40	*67*	78
Philippines	18.1	41.1	37	56	12	13	14	33	24	..	*88*
Poland	20.7	24.9	58	64	18	18	20	16	14	..	..
Portugal	2.9	3.6	29	37	13	19	24	46	53	..	..
Puerto Rico	2.1	2.8	67	74	34	30	29	51	48	..	..
Romania	10.9	12.8	49	57	9	9	10	18	17	..	..
Russian Federation	97.0	112.9	70	77	16	19	20	8	8	..	..

3.10 Urbanization

	Urban population				Population in urban agglomerations of more than one million			Population in the largest city		Access to sanitation in urban areas	
	millions		% of total population		% of total population			% of urban population		% of urban population	
	1980	**1997**	**1980**	**1997**	**1980**	**1995**	**2015**	**1980**	**1995**	**1982**	**1995**
Rwanda	0.2	0.5	5	6	0	0	..	..	..	*60*	..
Saudi Arabia	6.2	16.8	66	84	19	21	23	16	17	*100*	..
Senegal	2.0	4.0	36	45	18	24	30	47	47	*87*	*68*
Sierra Leone	0.8	1.6	24	35	0	0	..	..	..	30	..
Singapore	2.3	3.1	100	100	100	100	100	100	100	*85*	..
Slovak Republic	2.6	3.2	52	60	0	0	..	..	..	..	..
Slovenia	0.9	1.0	48	52	0	0	..	..	..	90	*100*
South Africa	13.3	20.2	48	50	11	20	23	12	11	..	*78*
Spain	27.2	30.2	73	77	20	18	18	16	14	..	..
Sri Lanka	3.2	4.2	22	23	0	0	..	..	..	..	81
Sudan	3.7	9.2	20	33	6	9	14	31	27	70	79
Sweden	6.9	7.4	83	83	17	17	19	20	21	..	..
Switzerland	3.6	4.4	57	62	0	0	..	20	21	..	..
Syrian Arab Republic	4.1	7.9	47	53	28	28	35	34	28	58	..
Tajikistan	1.4	2.0	34	32	0	0	..	..	..	..	..
Tanzania	2.7	8.0	15	26	5	6	9	30	24	93	..
Thailand	7.9	12.5	17	21	10	11	15	59	55	*50*	98
Togo	0.6	1.4	23	32	0	0	..	..	..	*34*	76
Trinidad and Tobago	0.7	0.9	63	73	0	0	..	..	..	*100*	97
Tunisia	3.3	5.8	52	63	17	23	26	35	31	64	*100*
Turkey	19.5	45.7	44	72	17	24	25	23	19	..	..
Turkmenistan	1.3	2.1	47	45	0	0	..	..	..	..	..
Uganda	1.1	2.7	9	13	0	0	..	42	40	*40*	60
Ukraine	30.9	36.1	62	71	14	16	19	7	8	..	..
United Arab Emirates	0.7	2.2	71	85	0	0	..	31	41	*93*	..
United Kingdom	50.0	52.7	89	89	25	23	22	15	15	..	..
United States	167.6	204.8	74	77	36	39	40	9	8	..	..
Uruguay	2.5	3.0	85	91	42	41	40	49	46	*59*	56
Uzbekistan	6.5	9.9	41	42	11	10	12	28	24	..	..
Venezuela	12.0	19.7	79	86	16	27	28	21	16	*57*	74
Vietnam	10.3	15.0	19	20	5	6	9	27	25	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	1.7	5.7	20	35	0	0	..	..	..	..	40
Yugoslavia, FR (Serb./Mont.)	4.5	6.1	46	58	11	13	15	24	20	..	..
Zambia	2.3	4.1	40	44	9	15	23	23	34	*56*	66
Zimbabwe	1.6	3.8	22	33	..	13	..	39	40	*100*	..
World	**1,748.2 s**	**2,676.0 s**	**39 w**	**46 w**	**14 w**	**16 w**	**18 w**	**18 w**	**17 w**	**.. w**	**.. w**
Low income	307.7	577.7	22	28	6	9	13	16	19	29	..
Middle income	824.3	1,389.9	37	49	12	16	18	19	16	..	77
Lower middle income	559.0	966.2	31	42	10	13	16	16	14	..	75
Upper middle income	265.4	423.7	62	74	22	27	27	24	20	..	..
Low & middle income	1,132.1	1,967.7	31	40	10	13	16	18	17	..	..
East Asia & Pacific	288.4	578.0	21	33	8	11	14	13	9	..	74
Europe & Central Asia	240.1	317.7	56	67	14	16	18	15	15	..	..
Latin America & Carib.	233.8	366.5	65	74	24	28	28	27	25	*60*	80
Middle East & N. Africa	83.7	161.9	48	58	17	21	23	31	27	81	..
South Asia	198.5	345.5	22	27	6	10	13	9	11	27	..
Sub-Saharan Africa	87.6	198.0	23	32	5	8	12	28	30	..	..
High income	616.1	708.4	75	76	31	33	35	17	16	..	..
Europe EMU	203.7	222.4	74	77	25	25	25	16	15	..	..

Urbanization 3.10

About the data

The population of a city or metropolitan area depends on the boundaries chosen. For example, in 1990 Beijing, China, contained 2.3 million people in 87 square kilometers of "inner city" and 5.4 million people in 158 square kilometers of "core city." The population of "inner city and inner suburban districts" was 6.3 million, and that of "inner city, inner and outer suburban districts, and inner and outer counties" was 10.8 million. (This table uses the last definition.)

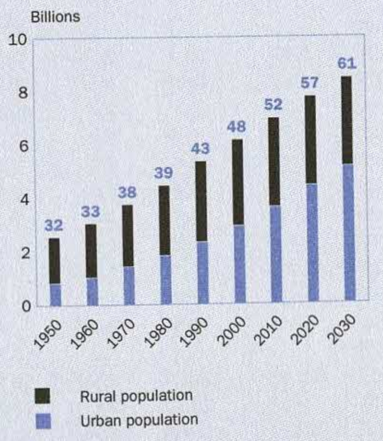
Estimates of the world's urban population would change significantly if China, India, and a few other populous nations were to change their definition of urban centers. In fact, according to China's State Statistical Bureau, by the end of 1996 urban residents accounted for about 43 percent of the country's population, while in 1994 only 20 percent of the population was considered urban. Besides the continuous migration of people from rural to urban areas, one of the main reasons for this shift was the rapid growth in the hundreds of towns reclassified as cities in recent years. Because the estimates in the table are based on national definitions of what constitutes a city or metropolitan area, cross-country comparisons should be made with caution.

To estimate urban populations, the United Nations' ratios of urban to total population were applied to the World Bank's estimates of total population (see table 2.1). The resulting urban population estimates were used to calculate the population in the largest city as a percentage of the urban population.

Urban areas with access to sanitation services are defined as urban populations served by connections to public sewers or household systems such as pit privies, pour-flush latrines, septic tanks, communal toilets, and similar facilities. These definitions and definitions of urban areas vary, however, so comparisons between countries can be misleading (see *About the data* for table 2.14).

Figure 3.10

The world's urban population continues to boom



Note: The numbers above the bars refer to the percentage share of the urban population in the total population.

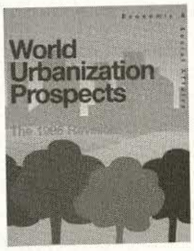
Source: United Nations 1997; World Bank staff estimates.

While only 3 of 10 people lived in urban areas in 1950, 6 of 10 will by 2030, resulting in substantial growth in the demand for services and, potentially, greater congestion and pollution.

Definitions

- **Urban population** is the midyear population of areas defined as urban in each country and reported to the United Nations (see *About the data*).
- **Population in urban agglomerations of more than one million** is the percentage of a country's population living in metropolitan areas that in 1990 had a population of more than one million people.
- **Population in the largest city** is the percentage of a country's urban population living in that country's largest metropolitan area. • **Access to sanitation in urban areas** is the percentage of the urban population served by connections to public sewers or household systems such as pit privies, pour-flush latrines, septic tanks, communal toilets, and similar facilities.

Data sources



Data on urban population, population in urban agglomerations, and population in the largest city come from the United Nations' *World Urbanization Prospects: The 1996 Revision*. Total population figures are World Bank estimates. Data on access to sanitation in urban areas are from the World Health Organization.

3.11 Urban environment

	City	Urban area	Urban population	Average household income	Income differential	House price to income ratio	Crowding	Work trips by public transportation	Travel time to work	Households with access to services		
					average income in fifth quintile to first quintile		Average floor space per person			Sewerage connection	Regular waste collection	Access to potable water
		sq. km 1993	thousands 1993	$ 1993	1993	1993	sq. m 1993	% 1993	minutes 1993	% 1993	% 1993	% 1993
Angola	Luanda	..	1,400	..	..	..	40.7	..	..	13	50	38
Armenia	Yerevan	215	1,223	1,407	28.4	39.0	13.0	98	52	93	81	98
Australia	Melbourne	1,148	3,023	30,216	12.0	3.6	55.0	16	25	99	100	100
Azerbaijan	Baku	2,300	..	977	8.7	13.0	12.9	80	57	79	..	100
Bangladesh	Dhaka	1,194	7,500	478	6.9	5.0	2.7	..	..	44	50	..
	Tangail	32	155	228	6.9	8.0	1.2	..	15	..	..	51
Benin	Cotonou	88	559	2,745	6.0	1.6	5.9	..	60	1	25	60
	Porto Novo	50	183	1,479	6.1	3.4	5.5	..	40	1	25	76
Bolivia	Santa Cruz de la Sierra	165	742	3,786	7.6	2.6	..	60	25	22	100	87
	La Paz	51	726	3,787	11.7	1.2	..	51	35	58	92	90
	El Alto	58	442	1,786	7.2	1.4	..	..	25	20	95	86
	Cochabamba	68	425	4,035	8.3	2.6	..	46	17	47	95	71
Botswana	Gaborone	..	473	..	..	7.2	12.5	42	20	33	98	100
Brazil	Rio de Janeiro	1,255	5,554	12,087	20.3	2.5	18.9	67	51	87	88	98
	Recife	..	1,503	815	28.7	2.2	15.5	70	40	38	95	95
	Curitiba	..	1,352	1,091	16.1	5.7	21.0	72	30	75	95	97
	Brasília	..	199	12,087	20.3	3.0	17.3	..	49	74	95	89
Bulgaria	Sofia	..	1,294	..	..	5.8	16.7	75	35	98	95	100
Burkina Faso	Ouagadougou	170	716	2,622	3.3	8.5	12.2	..	22	..	40	75
	Bobo-Dioulasso	67	284	2,379	9.1	10.2	12.0	..	15	..	30	81
Burundi	Bujumbura	100	278	1,823	17.0	1.9	5.8	..	30	29	41	93
Cameroon	Douala	144	1,094	..	..	4.6	10.0	11	45	3	60	83
	Yaoundé	..	923	677	..	3.9	12.6	6	50	3	44	85
Canada	Toronto	..	4,236	49,791	9.5	3.9	41.1	30	23	100	100	100
Central African Rep.	Bangui	163	471	..	..	6.2	11.2	..	45	1	25	45
Chile	Santiago	..	4,820	8,043	16.6	2.4	14.4	54	36	92	95	98
China	Hefei	..	3,809	2,080	13.8	..	11.0	..	..	57	..	100
	Quingda	..	2,121	1,165	1.8	..	11.1	..		11	..	100
	Shanghai	..	..	..	..	..	9.9	..	47	58	..	100
	Foshan	32	385	3,354	3.2	..	16.3	..	..	100	..	100
	Zhangjiagang	..	178	8,468	..	..	14.3	..	..	91	..	100
Colombia	Bogotá	482	5,314	7,120	14.7	3.1	8.8	75	39	99	94	97
Congo, Dem. Rep.	Kinshasa	591	4,566	2,241	6.7	..	..	61	120	3	0	70
Côte d'Ivoire	Abidjan	369	2,462	2,827	7.9	7.2	7.2	49	90	45	70	62
	Bouake	..	439	1,820	9.5	5.6	7.4	10	35	..	35	28
Croatia	Zagreb	..	868	4,354	5.9	11	22.1	52	26	80	100	90
Cuba	Havana	..	2,176	..	..	2.1	16.0	58	42	85	100	85
	Camaguey	155	296	..	..	..	18.7	6	30	46	93	71
	Cienfuegos	44	131	..	..	1.5	19.2	..	30	70	97	100
	Pinar del Rio	28	129	..	..	3.7	21.0	..	80	48	100	93
Czech Republic	Prague	496	1,214	..	..	11.9	26.0	67	57	94	100	100
Denmark	Copenhagen	2,863	1,326	29,320	14.0	3.1	44.0	27	22	100	100	100
Djibouti	Djibouti	..	..	6,856	12.0	3.7	13.1	19	22	15	65	69
Ecuador	Guayaquil	178	1,773	5,406	12.1	2.0	15.6	50	45	55	70	85
	Quito	178	1,615	..	..	2.4	8.6	0	..	93	89	..
Egypt	Cairo	420	14,524	1,658	6.1	4.9	13.0	58	60	91	65	98
	Gharbeya	..	383	1,656	6.1	3.9	13.3	32	30	91	45	99
	Assiout	10	322	1,721	6.7	3.1	14.0	29	25	30	25	93
El Salvador	San Salvador	163	1,343	4,320	12.7	2.7	6.6	..	..	80	46	91
	Santa Ana	18	142	2,998	10.6	3.2	8.1	..	..	57	90	82
	San Miguel	..	132	3,420	13.2	4.3	9.7	..	..	46	99	56
Estonia	Tallin	185	468	..	..	3.6	21.3	..	27	95	99	100
Ethiopia	Addis Ababa	..	8,044	..	..	..	..	..	62	..	54	77
France	Paris	2,586	9,319	20,899	14.7	4.3	30.0	40	35	98	100	100
	Lyon	..	1,262	..	..	..	..	..	..	90	100	100
	Marseilles	351	800	14,640	5.2	..	..	..	25	99	99	100

Urban environment 3.11

	City	Urban area	Urban population	Average household income	Income differential	House price to income ratio	Crowding	Work trips by public transportation	Travel time to work	Households with access to services		
		sq. km 1993	thousands 1993	$ 1993	average income in fifth quintile to first quintile 1993	1993	Average floor space per person sq. m 1993	% 1993	minutes 1993	Sewerage connection % 1993	Regular waste collection % 1993	Access to potable water % 1993
	Strasbourg	78	388	15,942	9.7	..	..	..	15	98	100	100
Gabon	Libreville	..	362	5,726	..	..	12.3	38	..	..	40	100
Gambia, The	Banjul	..	479	230	8.1	4.8	11.5	60	40	13	35	74
Georgia	Tbilisi	204	1,295	..	..	..	16.2	98	70	100	52	100
Germany	Cologne	405	1,006	..	..	..	34.0	17	..	99	100	100
	Duisburg	233	536	..	..	7.9	32.1	21	..	100	100	100
	Leipzig	151	481	..	..	..	33.0	33	..	95	100	100
	Wiesbaden	204	266	..	..	..	37.0	23	..	100	100	100
	Erfurt	268	213	..	..	5.1	29.1	32	..	95	100	100
Ghana	Accra	411	1,718	403	..	8.0	6.2	47	45	12	60	86
	Kumasi	..	758	822	2.9	17.8	5.8	55	20	12	11	57
	Tamale	22	193	682	1.9	17.4	5.2	45	18	6	5	38
Greece	Athens	..	1,464	..	..	3.1	29.0	34	53	95	90	100
Guatemala	Guatemala City	..	1,327	2,760	76.7	9.0	8.0	53	40	..	53	64
Guinea	Conakry	..	1,308	..	..	6.4	6.5	26	55	17	50	75
Hungary	Budapest	..	320	5,621	9.2	7.7	29.4	66	40	90	100	100
India	Hubli-Dharbad	..	..	1,114	7.1	3.6	6.2	37	22	37	89	89
	Bombay	..	12,810	1,504	6.7	3.5	3.5	79	33	51	90	96
	Delhi	624	8,957	1,196	11.4	7.0	6.9	53	44	40	77	92
	Madras	612	5,651	1,184	8.0	7.0	6.2	42	22	37	90	60
	Bangalore	..	4,472	1,224	6.5	10.8	9.5	46	18	35	96	81
	Lucknow	..	1,804	992	7.5	4.6	5.5	1	23	30	74	88
	Varanasi	104	1,078	928	7.8	5.1	4.5	21	22	41	88	85
	Mysore	..	701	1,236	6.4	7.5	11.8	13	20	60	60	90
	Bhiwandi	26	572	..	..	0.3	2.4	8	15	15	40	86
	Gulbarga	..	330	1,028	7.6	3.5	6.1	8	11	14	74	90
	Tumkur	..	194	809	6.1	4.9	7.4	21	8	..	50	86
Indonesia	Banjarmasin	..	..	1,474	4.4	4.0	6.4	12	37	..	70	94
	Surabaya	..	..	1,970	8.1	8.6	11.5	23	23	..	87	99
	Jakarta	..	13,048	2,460	6.6	9.9	15.0	38	82	..	84	93
	Bandung	..	1,819	1,625	5.8	12	13.1	..	29	27	97	86
	Medan	..	1,810	1,674	4.5	5.5	13.9	44	30	19	19	94
	Semarang	..	1,076	1,351	6.0	5.4	12.0	14	25	..	69	88
Iran, Islamic Rep.	Tehran	..	..	..	..	11.0	22.6	36	..	..	100	..
Jordan	Amman	..	..	12,813	13.9	6.5	15.4	14	31	79	100	100
Kazakhstan	Almaty	..	1,173	..	..	7.2	14.5	43	35	88	83	100
Kenya	Mombasa	234	382	..	..	1.9	5.9	31	27	2	40	95
	Nairobi	..	1,598	..	..	12.5	11.3	68	48	35	47	93
Kyrgyz Republic	Bishkek	..	703	..	..	..	..	60	35	65	89	100
Latvia	Riga	..	1,026	..	..	..	19.4	57	27	97	85	100
Liberia	Monrovia	..	697	..	..	24.0	14.0	75	60	1	0	20
Lithuania	Vilnius	..	670	..	..	5.4	16.2	49	25	94	95	100
Madagascar	Antananarivo	..	932	..	..	18.7	6.4	30	..	17	..	95
Malawi	Blantyre	..	403	..	..	8.3	8.3	39	44	8	20	80
	Lilongwe	..	220	..	..	4.2	6.6	5	31	12	..	80
	Mzuzu	..	115	..	..	5.2	6.5	10	35	..	16	60
Mali	Bamako	267	..	..	..	3.7	3.2	12	40	2	95	53
Mauritania	Nouakchott	72	576	1,481	8.9	6.4	10.0	45	50	4	15	68
Moldova	Chisinau	131	662	1,055	9.7	13.0	15.0	48	25	86	83	100
Mongolia	Ulaanbaatar	3,542	..	317	3.2	37.7	9.2	85	29	51	..	49
Morocco	Rabat	..	1,345	7,514	8.1	6.8	10.0	..	..	95	90	100
Mozambique	Maputo	..	..	414	4.9	..	12.0	13	..	23	37	73
Namibia	Windhoek	69	142	11,618	15.2	6.0	43.0	..	20	75	93	98
Netherlands	Amsterdam	202	724	21,687	5.2	3.5	38.3	22	22	100	100	100
New Zealand	Auckland	..	942	25,900	8.1	4.4	40.0	6	..	98	..	..
Niger	Niamey	224	505	1,369	13.2	7.3	7.7	17	27	..	25	77

3.11 Urban environment

	City	Urban area	Urban population	Average household income	Income differential average income in fifth quintile to first quintile	House price to income ratio	Crowding Average floor space per person	Work trips by public transportation	Travel time to work	Households with access to services Sewerage connection		
										Sewerage connection	Regular waste collection	Access to potable water
		sq. km	thousands	$			sq. m	%	minutes	%	%	%
		1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Nigeria	Onitsha	9	..	623	18.5	..	12.0	53	33	..	38	95
	Lagos	959	5,968	492	18.2	10.0	5.5	54	85	2	8	75
	Ibadan	2,937	1,941	415	50.0	6.8	9.0	40	40	..	40	70
	Kano	123	1,510	340	6.9	3.2	2.8	56	..	25	38	16
Pakistan	Lahore	..	5,150	3,298	7.7	16.0	1.2	16	25	74	50	90
Paraguay	Asunción	67	949	5,496	8.8	5.3	4.7	31	60	10	79	58
Peru	Lima	..	6,232	1,109	..	9.2	25.7	65	35	69	57	87
	Trujillo	45	509	..	..	3.8	15.2	74	30	71	48	98
Philippines	Manila	..	9,286	5,318	8.4	..	34.1	40	120	80	85	94
Poland	Warsaw	..	2,219	3,021	3.1	5.4	18.2	..	34	91	97	100
Romania	Bucharest	..	2,350	..	..	6.8	12.9	65	78	90	86	98
Russian Federation	Kostroma	..	..	2,357	5.1	5.1	17.8	65	21	91	90	100
	Moscow	..	9,269	4,040	7.6	17.0	19.7	85	62	100	100	100
	Nizhny Novgorod	..	..	2,459	4.6	6.4	17.1	78	35	95	100	100
	Novgorod	..	..	2,865	5.9	7.3	16.3	44	30	96	99	100
	Ryazan	..	..	2,348	6.9	8.9	16.2	88	25	92	99	100
Rwanda	Kigali	47	275	2,279	11.6	..	..	32	..	..	..	48
Senegal	Dakar	..	1,801	3,008	17.0	3.0	8.1	53	45	25	75	92
	Kaoloack	..	187	1,488	20.9	..	..	13	27	3	..	56
	Ziguinchor	..	155	1,150	22.0	..	..	27	20	2	..	30
	Mbour	..	101	2,192	15.9	..	..	20	31	2	..	79
Sierra Leone	Freetown	82	395	370	11.4	..	10.0	84	..	1	..	53
Slovak Republic	Bratislava	2,144	651	3,984	5.1	5.6	22.3	72	34	96	100	100
Slovenia	Ljubljana	275	316	11,729	6.1	..	..	1	22	99	99	100
	Maribor	738	185	9,314	6.2	..	..	41	28	58	90	100
Sri Lanka	Colombo	..	2,190	436	3.4	..	18.7	74	35	60	94	98
Sudan	Khartoum	249	826	..	..	..	21.9	63	42	3	12	55
Sweden	Stockholm	309	1,545	30,840	4.5	4.6	40.0	37	35	100	100	100
Tanzania	Arusha	..	..	564	4.1	5.0	5.0	61	30	16	..	60
	Dar es Salaam	..	..	564	4.1	5.0	4.5	48	30	6	25	60
	Mwanza	94	..	..	..	5.0	4.0	24	30	8	15	74
Togo	Lomé	288	802	..	..	3.5	12.0	30	30	..	37	..
Tunisia	Tunis	..	1,684	4,032	6.0	5.2	12.0	..	45	73	61	96
Uganda	Kampala	202	840	..	..	2.3	4.0	45	23	9	20	87
United Arab Emirates	Dubai	604	594	26,564	22.8	..	..	..	18	60	100	100
United Kingdom	Hertfordshire	1,604	1,000	28,270	10.9	6.0	34.8	7	27	100	100	100
	Glasgow	..	618	7,329	1.8	4.5	..	39	..	99	..	99
	Bedfordshire	..	539	32,080	10.9	3.0	34.6	10	..	93	98	98
	Cardiff	137	306	..	..	2.9	17.5	13	..	100	100	100
United States	New York	..	16,332	39,256	14.8	6.3	..	51	37	99	..	100
	Des Moines	..	..	31,732	8.6	1.8	..	..	16	99	..	100
	Atlanta	..	..	32,966	22.4	3.1	..	..	24	98	..	100
Vietnam	Hanoi	47	..	510	3.4	10.4	5.8	..	..	40	45	100
Yemen	Sana'a	..	..	183	..	17.0	4.0	..	15	12	51	60
Yugoslavia, FR	Belgrade	765	1,318	..	..	16.0	19.4	..	35	71	86	99
	Novi Sad	290	232	..	..	30.0	21.8	60	21	93	95	100
	Nis	150	214	..	..	17.4	19.7	61	25	84	87	92
Zambia	Lusaka	..	..	867	14.0	6.5	6.9	65	20	36	..	60
Zimbabwe	Harare	..	..	754	5.0	9.8	8.0	48	56	93	100	97

Urban environment 3.11

About the data

Despite the importance of cities and urban agglomerations as home to almost half the world's people, the data on many aspects of urban life are sparse. Compiling comparable data has been difficult, and the available indicators have been scattered among international agencies with different mandates. Even within cities it is difficult to assemble an integrated data set. Urban areas are often spread across many jurisdictions, with no single agency responsible for collecting and reporting data for the entire area. Adding to the difficulties of data collection are gaps and overlap in the data collection and reporting responsibilities of different administrative units. Creating a comprehensive, comparable international data set is further complicated by differences in the definition of an urban area and by uneven data quality.

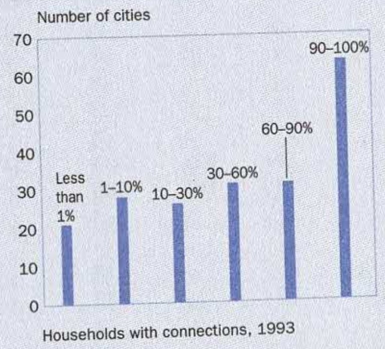
The United Nations Global Plan of Action calls for monitoring the changing role of the world's cities and human settlements. The international agency with a mandate to assemble information on urban areas is the United Nations Center for Human Settlements (UNCHS, or Habitat). Its Urban Indicators Programme is intended to provide data for monitoring and evaluating the performance of urban areas and for developing government policies and strategies. These data are collected through questionnaires completed by city officials from more than a hundred countries. The table shows selected indicators for 150 cities taken from the UNCHS data set covering 237 cities and 43 indicators. A few more indicators are included in the *World Development Indicators* CD-ROM.

The original UNCHS selection of 237 cities has a bias toward smaller cities rather than reflecting population weights or the economic importance of cities. Furthermore, it is based on demand for participation in the Urban Indicators Programme. As a result the database excludes a large number of major cities. The table reflects this bias, as well as the criterion of data availability for the indicators shown in the table.

The data should be used with care. Because different data collection methods and definitions may have been used, comparisons can be misleading. And because data are available only for 1993, no conclusions can be drawn about any improvement or worsening of conditions.

Figure 3.11

Household sewerage connections remain scarce in many cities



Source: UNCHS, Global Urban Indicators database.

Of the 237 cities covered by the UNCHS Urban Indicators Programme, 200 provided information on sewerage connections in 1993. In one of four of these cities, less than 10 percent of households had a sewerage connection. And in 100 of these cities almost 50 percent of the households had no connection.

Definitions

- **Urban area** refers to the city proper along with the suburban fringe and any built-up, thickly settled areas lying outside, but adjacent to, the city boundaries.
- **Urban population** refers to the population of the urban agglomeration, a contiguous inhabited territory without regard to administrative boundaries. • **Average household income** is the average of the household income in all five quintiles. Household income is the total income of all household members from all sources, including wages, pensions or benefits, business earnings, rents, and the value of any business or subsistence products consumed (for example, foodstuffs).
- **Income differential** is the ratio of average household income in the highest quintile to that in the lowest quintile. • **House price to income ratio** is the average house price divided by the average household income.
- **Crowding** is measured by floor area per person, the median usable living space per person in square meters.
- **Work trips by public transportation** are the percentage of trips to work made by bus or minibus, tram, or train. Buses or minibuses refer to road vehicles other than cars taking passengers on a fare-paying basis. Other means of transport commonly used in developing countries, such as taxi, ferry, rickshaw, or animal, are not included. • **Travel time to work** is the average time in minutes, for all modes, for a one-way trip to work. Train and bus times include average walking and waiting times, and car times include parking and walking to the workplace. • **Households with sewerage connection** are the percentage of households with a connection to sewerage. • **Households with regular waste collection** are the percentage of households with regular waste collection including household collection and regular "dumpster" group collection, but not household transport of garbage to a local dump. • **Households with access to potable water** are the percentage of households having access to safe or potable drinking water within 200 meters of the dwelling. Potable water is water that is free from contamination and safe to drink without further treatment.

Data sources

Data are from the Global Urban Indicators database of the UNCHS's Urban Indicators Programme.

3.12 Traffic and congestion

	Motor vehicles				Passenger cars		Two-wheelers		Road traffic		Traffic accidents	
	per 1,000 people		per kilometer of road		per 1,000 people		per 1,000 people		million vehicle kilometers		people injured or killed per 1,000 vehicles	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	..	*31*	..	*6*	..	*20*	..	*2*	..	*3,676*	..	*5*
Algeria	..	*52*	..	*14*	*30*	*25*	*1*	..	..	..	..	..
Angola	..	*20*	..	*3*	..	*18*	..	..	..	..	..	..
Argentina	155	*154*	20	*25*	..	*127*	..	*1*	..	*56,590*	..	..
Armenia	..	*2*	..	*1*	..	*0*	..	*2*	..	..	..	..
Australia	502	*601*	..	*12*	401	*485*	24	*16*	204	..	5	..
Austria	330	507	23	20	297	469	76	71	35,430	..	27	13
Azerbaijan	..	47	..	8	..	36	..	0	..	*2,207*	..	8
Bangladesh	..	1	..	*1*	..	0	..	1	..	..	..	66
Belarus	..	111	..	21	..	110	..	54	..	..	..	8
Belgium	349	477	28	*33*	..	433	..	22	45,779	*59,884*	25	15
Benin	..	*8*	..	*7*	..	*7*	..	*44*	..	*6,575*	..	*74*
Bolivia	19	*48*	3	*7*	..	*29*	..	*9*	795	*1,730*	41	..
Bosnia and Herzegovina	..	*48*	..	*5*	..	*43*	..	..	..	..	..	*25*
Botswana	27	*44*	3	*4*	9	*15*	1	..	..	..	50	*94*
Brazil	85	*79*	7	*6*	75	..	3	..	..	..	3	*4*
Bulgaria	..	238	..	54	92	208	..	63	665	..	..	4
Burkina Faso	..	*6*	..	*5*	..	*4*	..	*10*	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..	..	..	..
Cambodia	..	6	..	2	..	5	..	44	..	1,407	..	31
Cameroon	8	*12*	4	*4*	..	*7*	..	..	..	..	112	..
Canada	548	*563*	..	*18*	417	*441*	19	*10*	205,515	..	..	*14*
Central African Republic	8	*0*	1	*0*	..	*0*	..	*0*	..	*1,250*	..	..
Chad	..	*4*	..	*1*	..	*2*	..	*1*	..	..	..	..
Chile	61	*110*	8	*20*	45	*71*	4	*2*	7,540	..	38	*33*
China	2	*8*	2	*7*	..	*3*	..	*8*	2,032	*165,000*	12	*22*
Hong Kong, China	54	*77*	234	*276*	41	*55*	5	*5*	4,407	*10,336*	77	*39*
Colombia	..	*37*	..	*13*	11	*19*	16	..	2,480	..	..	..
Congo, Dem. Rep.	..	*31*	..	*9*	..	*17*	..	..	..	..	..	..
Congo, Rep.	..	*20*	..	*4*	..	*14*	..	..	..	..	..	*21*
Costa Rica	..	132	..	13	20	85	..	*15*	..	*4,244*	..	28
Côte d'Ivoire	24	33	..	*9*	..	*21*	..	..	..	..	..	..
Croatia	..	*158*	..	*28*	..	..	..	..	..	..	..	*24*
Cuba	..	32	..	6	..	16	..	16	..	..	..	28
Czech Republic	..	372	..	30	..	344	..	107	..	*27,994*	..	10
Denmark	322	*388*	24	*28*	271	*331*	..	*10*	26,300	*43,214*	10	*5*
Dominican Republic	36	*47*	11	*30*	20	*28*	12	..	..	..	18	..
Ecuador	..	*44*	..	*12*	28	*40*	..	*2*	..	*29,172*	..	*17*
Egypt, Arab Rep.	..	*30*	..	*28*	8	*23*	..	*7*	..	*6,222*	..	*16*
El Salvador	..	61	..	36	16	30	..	5	..	4,731	..	26
Eritrea	..	*2*	..	*1*	..	*2*	..	..	..	..	..	..
Estonia	..	350	..	31	..	293	..	4	..	..	..	4
Ethiopia	2	2	1	*3*	1	1	0	0	2	..	38	..
Finland	288	433	18	29	256	379	36	32	26,750	55,696	7	4
France	402	530	27	35	355	442	97	..	298,000	466,200	16	6
Gabon	..	*36*	..	*5*	..	*22*	..	..	..	..	..	..
Gambia, The	..	*15*	..	*7*	*11*	*8*	*1*	..	..	..	..	..
Georgia	..	*86*	..	*23*	..	*79*	..	*5*	..	*5,503*	..	*5*
Germany	399	*529*	51	*68*	297	*500*	38	*30*	..	*554,394*	..	*12*
Ghana	..	*8*	..	*4*	..	*5*	..	..	..	..	..	..
Greece	134	*313*	35	*28*	91	*223*	12	*184*	..	*510*	23	*10*
Guatemala	..	*19*	..	*15*	..	*10*	..	..	..	..	..	..
Guinea	..	*5*	..	*1*	..	*2*	..	..	..	..	..	..
Guinea-Bissau	..	*11*	..	*3*	..	*6*	..	..	..	..	..	..
Haiti	..	*7*	..	*13*	..	*4*	..	..	..	..	..	..
Honduras	..	*35*	..	*13*	..	..	..	..	..	..	..	..

Traffic and congestion 3.12

	Motor vehicles				Passenger cars		Two-wheelers		Road traffic		Traffic accidents	
	per 1,000 people		per kilometer of road		per 1,000 people		per 1,000 people		million vehicle kilometers		people injured or killed per 1,000 vehicles	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Hungary	108	259	13	14	95	226	..	14	..	..	22	10
India	2	*7*	1	*2*	..	*4*	..	*24*	..	..	..	*61*
Indonesia	8	*22*	8	*13*	..	13	..	59	..	..	59	*1*
Iran, Islamic Rep.	..	*41*	..	*15*	..	*30*	..	*43*	..	..	..	*14*
Iraq	..	*51*	..	*23*	..	*36*	..	..	..	..	..	*5*
Ireland	236	*305*	9	*12*	216	*272*	8	*6*	14,917	*28,390*	11	..
Israel	123	265	114	100	107	213	..	12	10,442	33,726	38	31
Italy	334	*581*	65	*108*	303	*533*	114	*44*	226,569	*657,849*	12	*8*
Jamaica	..	*50*	..	*7*	..	*41*	..	..	..	..	..	..
Japan	323	*547*	34	*60*	203	*373*	102	*1*	389,052	*737,771*	16	*14*
Jordan	56	*68*	25	*44*	41	*50*	2	*0*	623	*6,030*	63	*54*
Kazakhstan	..	84	..	11	..	62	..	..	..	82,109	..	10
Kenya	8	*13*	3	*6*	7	*10*	1	*1*	..	*11,894*	74	..
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	14	226	11	123	7	165	6	56	8,728	255,829	212	34
Kuwait	390	*408*	..	*156*	..	*317*	..	..	12,189	..	7	..
Kyrgyz Republic	..	*32*	..	*8*	..	*32*	..	*1*	..	..	..	*26*
Lao PDR	..	*4*	..	*1*	..	*3*	..	*49*	..	..	..	..
Latvia	..	214	..	9	..	175	..	8	..	..	..	10
Lebanon	..	*320*	..	*205*	..	*299*	..	*13*	..	..	..	..
Lesotho	10	*19*	3	*8*	3	*6*	0	..	..	*445*	85	..
Libya	..	*230*	..	*48*	..	*159*	..	*0*	..	..	..	*8*
Lithuania	..	265	..	14	..	238	..	5	..	*198*	..	12
Macedonia, FYR	..	*151*	..	*35*	..	..	..	..	..	*4,247*	..	*12*
Madagascar	..	*6*	3	*2*	..	*5*	..	..	1	..	..	*11*
Malawi	5	*6*	3	*4*	2	*3*	2	..	..	..	..	*89*
Malaysia	..	182	..	*37*	52	154	101	200	..	..	..	14
Mali	..	*4*	..	*3*	..	*3*	..	..	..	3	..	*22*
Mauritania	..	*12*	..	*4*	..	*8*	..	..	..	..	..	..
Mauritius	44	84	23	51	27	64	27	90	46	..	..	39
Mexico	..	*141*	..	*52*	60	*93*	..	*3*	..	..	..	..
Moldova	..	*54*	..	*19*	..	*39*	..	*25*	..	*910*	..	*15*
Mongolia	..	28	..	1	..	14	..	10	..	*1,736*	..	23
Morocco	..	*48*	..	*21*	..	*38*	..	*1*	18	..	..	*46*
Mozambique	..	*1*	..	*0*	..	*0*	..	..	..	..	..	..
Myanmar	..	*2*	..	*2*	..	*1*	..	..	..	..	..	..
Namibia	..	*85*	..	*2*	..	*47*	..	*1*	..	*2,547*	..	5
Nepal	..	..	..	..	..	..	..	..	..	..	..	..
Netherlands	343	412	..	52	322	372	61	*57*	70,825	144,894	12	3
New Zealand	492	*555*	17	*22*	420	*451*	43	*13*	16,545	..	11	*9*
Nicaragua	..	*30*	..	*8*	8	*16*	..	*5*	..	*150*	..	*29*
Niger	6	*6*	..	*5*	5	*4*	..	..	..	*240*	63	..
Nigeria	4	*12*	3	*7*	3	*7*	4	..	..	..	123	..
Norway	342	493	17	24	302	399	36	49	..	*25,386*	8	5
Oman	..	*142*	..	*9*	..	*97*	..	*2*	..	..	..	*23*
Pakistan	2	7	5	4	2	*5*	3	13	..	*14,361*	71	8
Panama	..	*104*	..	*25*	..	*76*	..	*3*	..	..	..	*34*
Papua New Guinea	..	*26*	..	*6*	..	*7*	..	..	..	..	..	..
Paraguay	..	*24*	..	*4*	..	*14*	..	..	..	..	..	..
Peru	..	*122*	..	*40*	..	*59*	..	..	..	..	..	..
Philippines	..	30	..	14	6	10	*4*	13	..	*193*	..	*2*
Poland	86	262	10	27	67	221	..	42	44,597	134,876	..	9
Portugal	145	384	26	*49*	..	288	..	78	283	85,957	31	18
Puerto Rico	..	*282*	..	*74*	..	*232*	..	..	..	..	..	..
Romania	..	*125*	..	*18*	..	*107*	..	*15*	..	*33,900*	..	*4*
Russian Federation	..	153	..	39	..	120	..	..	..	..	..	10

3.12 Traffic and congestion

	Motor vehicles				**Passenger cars**		**Two-wheelers**		**Road traffic**		**Traffic accidents**	
	per 1,000 people		per kilometer of road		per 1,000 people		per 1,000 people		million vehicle kilometers		people injured or killed per 1,000 vehicles	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Rwanda	2	*4*	2	*2*	1	*2*	1	..	..	..	..	..
Saudi Arabia	163	*151*	26	*18*	67	*90*	..	*0*	..	*120,698*	..	*13*
Senegal	19	*14*	8	*8*	..	*10*	..	*0*	..	..	56	*86*
Sierra Leone	..	*6*	..	*2*	..	*4*	..	*2*	..	*29*	..	*30*
Singapore	..	168	..	173	*71*	122	*55*	42	..	..	..	*14*
Slovak Republic	..	241	..	74	..	211	..	15	..	*651*	..	10
Slovenia	..	415	..	56	..	385	..	4	..	*8,037*	..	11
South Africa	133	*142*	18	*16*	85	*100*	7	*7*	52,939	..	25	*26*
Spain	239	472	120	53	202	389	33	34	70,489	411,453	13	7
Sri Lanka	..	*14*	..	*3*	*8*	*6*	*6*	*28*	..	*1,149*	..	*75*
Sudan	..	*12*	..	*28*	..	*10*	..	..	..	..	..	..
Sweden	370	456	24	19	347	418	2	28	35,000	65,410	7	5
Switzerland	383	508	38	51	356	469	128	103	..	*50,650*	14	8
Syrian Arab Republic	..	*29*	..	*10*	..	*10*	..	..	..	..	..	*24*
Tajikistan	..	*1*	..	*1*	..	*0*	..	..	..	..	..	..
Tanzania	3	*5*	1	*2*	2	*1*	1	..	..	..	..	*104*
Thailand	13	*104*	13	*97*	9	*28*	19	*171*	16,824	*99,900*	29	*13*
Togo	..	*27*	1	*15*	..	*19*	..	*14*	..	*386*	..	..
Trinidad and Tobago	..	*113*	..	*18*	..	*94*	..	..	..	..	..	..
Tunisia	38	*64*	10	*25*	20	*30*	2	..	..	..	45	..
Turkey	23	73	4	12	..	59	..	14	14,785	*41,015*	26	25
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	1	*4*	1	..	1	*2*	0	*2*	479	..	..	*130*
Ukraine	..	*93*	..	*27*	..	96	..	55	..	*60,168*	..	*5*
United Arab Emirates	..	*103*	..	*52*	..	*82*	..	..	..	..	..	..
United Kingdom	303	415	50	66	268	371	24	11	245,900	*437,541*	19	13
United States	..	*773*	25	*32*	536	*489*	30	*15*	2,418,619	*3,831,200*	..	*17*
Uruguay	..	174	..	63	..	158	..	110	..	..	..	*5*
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	112	*88*	27	*23*	91	*68*	40	..	56,900	..	32	..
Vietnam	..	..	..	..	..	..	..	*45*	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	*34*	..	*8*	8	*15*	3	..	1,251	*11,477*	..	*15*
Yugoslavia, FR (Serb./Mont.)	118	188	23	40	..	173	..	*4*	..	..	59	*11*
Zambia	..	*26*	..	*4*	..	*17*	..	..	..	..	..	..
Zimbabwe	..	*32*	..	*19*	..	*29*	..	*32*	..	..	..	*54*
World	**72 w**	***121* w**	..	..	.. w	**90 w**	..	..	..	..	..	..
Low income	3	*8*	..	..	..	5	..	..	..	..	..	..
Middle income	22	*55*	..	..	..	37	..	..	..	..	..	..
Lower middle income	5	*35*	..	..	..	22	..	..	..	..	..	..
Upper middle income	90	*132*	..	..	70	119	..	..	..	..	..	..
Low & middle income	14	*36*	..	..	..	24	..	..	..	..	..	..
East Asia & Pacific	3	*16*	..	..	..	7	..	..	..	..	..	..
Europe & Central Asia	..	161	..	..	..	113	..	..	..	..	..	..
Latin America & Carib.	..	*92*	..	..	62	*72*	..	..	..	..	..	..
Middle East & N. Africa	..	*59*	..	..	..	40	..	..	..	..	..	..
South Asia	2	*6*	..	..	..	4	..	..	..	..	..	..
Sub-Saharan Africa	..	*21*	..	..	..	14	..	..	..	..	..	..
High income	321	*554*	..	..	..	415	..	..	..	..	..	..
Europe EMU	345	*508*	..	..	296	454	..	..	..	..	..	..

Traffic and congestion 3.12

About the data

Traffic congestion in urban areas constrains economic productivity, damages people's health, and degrades the quality of their lives. The particulate air pollution—the dust and soot in exhaust—emitted by motor vehicles is proving to be far more damaging to human health than was once believed. (See table 3.13 for information on suspended particulates and other air pollutants.)

In recent years ownership of passenger cars has increased, and the expansion of economic activity has led to the transport by road of more goods and services over greater distances (see table 5.9). These developments have increased demand for roads and vehicles, adding to urban congestion, air pollution, health hazards, traffic accidents, and injuries.

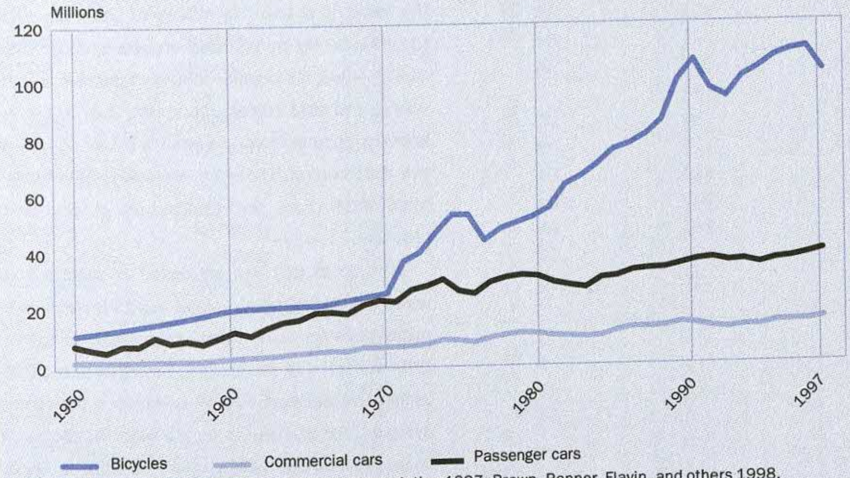
Congestion, the most visible cost of expanding vehicle ownership, is reflected in the indicators in the table. Other relevant indicators—such as average vehicle speed in major cities or the cost of traffic congestion, which exact a heavy toll on economic productivity—are not included here because data are incomplete or difficult to compare.

The data in the table are compiled by the International Road Federation (IRF) through questionnaires sent to national organizations. The IRF uses a hierarchy of sources to gather as much information as possible. The primary sources are national road associations. When such an association is lacking or does not respond, other agencies are contacted, including road directorates, ministries of transport or public works, and central statistical offices. As a result the compiled data are of uneven quality. The coverage of each indicator may differ across countries because of differences in definitions. Comparability also is limited when time-series data are reported. Moreover, the data do not capture the quality or age of vehicles or the condition or width of roads. Thus comparisons over time and between countries should be made with caution.

The population numbers used to compute motor vehicles per 1,000 are World Bank estimates (see table 2.1).

Figure 3.12

Bicycles outpace cars in world production



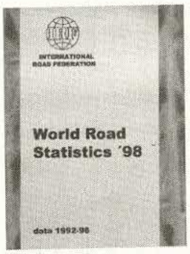
Source: American Automobile Manufacturers Association 1997; Brown, Renner, Flavin, and others 1998.

After surging in the 1960s and 1970s, car production slowed as a result of oil price increases and environmental awareness in the first half of the 1970s. Meanwhile, the demand for bicycles boomed as incomes rose rapidly in China and as many cities started to encourage their use. By 1980 the world was producing more than twice as many bicycles (62 million) as passenger cars.

Definitions

- **Motor vehicles** include cars, buses, and freight vehicles but do not include two-wheelers. Population figures refer to midyear population in the year for which data are available. Roads refer to motorways, highways, main or national roads, or secondary or regional roads. A motorway is a road specially designed and built for motor traffic, separating the traffic flowing in opposite directions. • **Passenger cars** refer to individual four-wheel transport. • **Two-wheelers** refer to mopeds and motorcycles. • **Road traffic** is the number of vehicles multiplied by the average distances they travel. • **Traffic accidents** refer to accident-related injuries reported to the authorities and to deaths resulting from accidents that occur within 30 days of the accident.

Data sources



INTERNATIONAL ROAD FEDERATION

World Road Statistics '98

data 1992-96

The data in the table are from the IRF's annual *World Road Statistics*.

3.13 Air pollution

	City	City population	Total suspended particulates	Sulfur dioxide	Nitrogen dioxide
		thousands 1995	micrograms per cubic meter 1995[a]	micrograms per cubic meter 1995[a]	micrograms per cubic meter 1995[a]
Argentina	Córdoba City	1,294	97	..	97
Australia	Sydney	3,590	54	28	..
	Melbourne	3,094	35	0	30
	Perth	1,220	45	5	19
Austria	Vienna	2,060	47	14	42
Belgium	Brussels	1,122	78	20	48
Brazil	Sao Paulo	16,533	86	43	83
	Rio de Janeiro	10,181	139	129	..
Bulgaria	Sofia	1,188	195	39	122
Canada	Toronto	4,319	36	17	43
	Montreal	3,320	34	10	42
	Vancouver	1,823	29	14	37
Chile	Santiago	4,891	..	29	81
China	Shanghai	13,584	246	53	73
	Beijing	11,299	377	90	122
	Tianjin	9,415	306	82	50
	Shenyang	5,116	374	99	73
	Chengdu	4,323	366	77	74
	Wuhan	4,247	211	40	43
	Guangzhu	4,056	295	57	136
	Zibo	3,779	453	198	43
	Liupanshui	3,615	408	102	..
	Chongquing	3,525	320	340	70
	Harbin	3,303	359	23	30
	Quingdao	3,138	..	190	64
	Dalian	3,132	185	61	100
	Jinan	3,019	472	132	45
	Changchun	2,523	381	21	64
	Taiyuan	2,502	568	211	55
	Pinxiang	2,040	276	75	..
	Zhengzhou	1,999	474	63	95
	Kunming	1,942	253	19	33
	Guiyang	1,792	330	424	53
	Lanzhou	1,747	732	102	104
	Anshan	1,648	305	115	88
	Nanchang	1,646	279	69	29
	Urumqi	1,643	515	60	70
Colombia	Bogotá	6,079	120	..	..
Croatia	Zagreb	981	71	31	..
Cuba	Havana	2,241	..	1	5
Czech Republic	Prague	1,225	59	32	23
Denmark	Copenhagen	1,326	61	7	54
Ecuador	Guayaquil	1,831	127	15	..
	Quito	1,298	175	31	..
Egypt, Arab Rep.	Cairo	9,690	..	69	..
Finland	Helsinki	1,059	40	4	35
France	Paris	9,523	14	14	57
Germany	Frankfurt	3,606	36	11	45
	Berlin	3,317	50	18	26
	Munich	2,238	45	8	53
Ghana	Accra	1,673	137	..	..
Greece	Athens	3,093	178	34	64
Hungary	Budapest	2,017	63	39	51
Iceland	Reykjavik	100	24	5	42
India	Bombay	15,138	240	33	39
	Calcutta	11,923	375	49	34

About the data

In many towns and cities exposure to air pollution is the main environmental threat to human health. Winter smog—made up of soot, dust, and sulfur dioxide—has long been associated with temporary spikes in the number of deaths. Long-term exposure to high levels of soot and small particles in the air also contributes to a wide range of chronic respiratory diseases and exacerbates heart disease and other conditions. Particulate pollution, either on its own or in combination with sulfur dioxide, leads to an enormous burden of ill health, causing at least 500,000 premature deaths and 4–5 million new cases of chronic bronchitis each year (World Bank 1992).

Emissions of sulfur dioxide and nitrogen oxides lead to the deposition of acid rain and other acidic compounds over long distances—often more than 1,000 kilometers from their source. Acid deposition changes the chemical balance of soils and can lead to the leaching of trace minerals and nutrients critical to trees and plants. The links between forest damage and acid deposition are complex. Direct exposure to high levels of sulfur dioxide or acid deposition can cause defoliation and dieback.

Where coal is the primary fuel for power plants, steel mills, industrial boilers, and domestic heating, the result is usually high levels of urban air pollution—especially particulates and sometimes sulfur dioxide—and, if the sulfur content of the coal is high, widespread acid deposition. Where coal is not an important primary fuel or is used by plants with effective dust control, the worst emissions of air pollutants stem from the combustion of petroleum products.

Data on air pollution are based on reports from urban monitoring sites. Annual means (measured in micrograms per cubic meter) are average concentrations observed at these sites. Coverage is not comprehensive because not all cities have monitoring systems. For example, data are reported for just 3 cities in Africa but for more than 87 cities in China. Pollutant concentrations are sensitive to local conditions, and even in the same city different monitoring sites may register different concentrations. Thus these data should be considered only a general indication of air quality in each city, and cross-country comparisons should be made with caution. World Health Organization (WHO) annual mean guidelines for air quality standards are 90 micrograms per cubic meter for total suspended particulates, 50 micrograms per cubic meter for sulfur dioxide, and 50 micrograms per cubic meter for nitrogen dioxide.

Air pollution 3.13

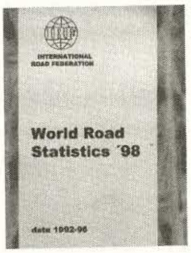
	City	City population	Total suspended particulates	Sulfur dioxide	Nitrogen dioxide
		thousands 1995	micrograms per cubic meter 1995[a]	micrograms per cubic meter 1995[a]	micrograms per cubic meter 1995[a]
	Delhi	9,948	415	24	41
	Madras	6,002	130	15	17
	Hyderabad	5,477	152	12	17
	Bangalore	4,799	123	..	..
	Ahmedabad	3,711	299	30	21
	Pune	2,955	208		
	Kanpur	2,227	459	15	14
	Lucknow	2,078	463	26	25
	Nagpur	1,851	185	6	13
Indonesia	Jakarta	8,621	271	..	..
Iran, Islamic Rep.	Tehran	6,836	248	209	..
Ireland	Dublin	911	..	20	..
Italy	Milan	4,251	77	31	248
	Rome	2,931	73	..	..
	Torino	1,294	151	..	..
Japan	Tokyo	26,959	49	18	68
	Osaka	10,609	43	19	63
	Yokohama	3,178	..	100	13
Kenya	Nairobi	1,810	69	..	..
Korea, Rep.	Seoul	11,609	84	44	60
	Pusan	4,082	94	60	51
	Taegu	2,432	72	81	62
Malaysia	Kuala Lumpur	1,238	85	24	..
Mexico	Mexico City	16,562	279	74	130
Netherlands	Amsterdam	1,108	40	10	58
New Zealand	Auckland	945	26	3	20
Norway	Oslo	477	15	8	43
Philippines	Manila	9,286	200	33	..
Poland	Warsaw	2,219	..	16	32
	Lodz	1,063	..	21	43
Portugal	Lisbon	1,863	61	8	52
Romania	Bucharest	2,100	82	10	71
Russian Federation	Moscow	9,269	100	109	..
	Omsk	1,199	100	9	30
Singapore	Singapore	2,848	..	20	30
Slovak Republic	Bratislava	651	62	21	27
South Africa	Capetown	2,671	..	21	72
	Johannesburg	1,849	..	19	31
	Durban	1,149	..	31	..
Spain	Madrid	4,072	42	11	25
	Barcelona	2,819	117	11	43
Sweden	Stockholm	1,545	9	5	29
Switzerland	Zurich	897	31	11	39
Thailand	Bangkok	6,547	223	11	23
Turkey	Istanbul	7,911	..	120	..
	Ankara	2,826	57	55	46
Ukraine	Kiev	2,809	100	14	51
United Kingdom	London	7,640	..	25	77
	Manchester	2,434	..	26	49
	Birmingham	2,271	..	9	45
United States	New York	16,332	..	26	79
	Los Angeles	12,410	..	9	74
	Chicago	6,844	..	14	57
Venezuela	Caracas	3,007	53	33	57

a. Data are most recent available for 1990–95. Most are for 1995.

Definitions

- **City population** is the number of residents of the city as defined by national authorities and reported to the United Nations. • **Total suspended particulates** refer to smoke, soot, dust, and liquid droplets from combustion that are in the air. Particulate levels indicate the quality of the air people are breathing and the state of a country's technology and pollution controls. • **Sulfur dioxide** (SO_2) is an air pollutant produced when fossil fuels containing sulfur are burned. It contributes to acid rain and can damage human health, particularly that of the young and the elderly. • **Nitrogen dioxide** (NO_2) is a poisonous, pungent gas formed when nitric oxide combines with hydrocarbons and sunlight, producing a photochemical reaction. These conditions occur in both natural and anthropogenic activities. NO_2 is emitted by bacteria, nitrogenous fertilizers, aerobic decomposition of organic matter in oceans and soils, combustion of fuels and biomass, and motor vehicles and industrial activities.

Data sources



INTERNATIONAL ROAD FEDERATION

World Road Statistics '98

data 1992-96

The data in the table are from the WHO's Healthy Cities Air Management Information System and the World Resources Institute, which relies on various national sources as well as, among others, the United Nations Environment Programme (UNEP) and WHO's *Urban Air Pollution in Megacities of the World,* the Organisation for Economic Co-operation and Development's (OECD) *OECD Environmental Data: Compendium 1997,* the U.S. Environmental Protection Agency's *National Air Quality and Emissions Trends Report 1995* and AIRS Executive International database, the *China Environmental Yearbook 1996,* and the *Korea Statistical Yearbook 1995.*

3.14 Government commitment

	Environmental strategy or action plan	Country environmental profile	Biodiversity assessment, strategy, or action plan	Participation in treaties[a]				
				Climate change	Ozone layer	CFC control	Law of the Sea[b]	Biological diversity
Albania	1993	..	..	1995	..	..	..	1994
Algeria	..	..	..	1994	1993	1993	1996	1995
Angola	..	..	..	..	..	..	1994	..
Argentina	1992	..	..	1994	1990	1990	1996	1995
Armenia	..	..	..	1994	..	..	..	1993
Australia	1992	..	1994	1994	1988	1989	1995	1993
Austria	..	..	..	1994	1988	1989	1995	1994
Azerbaijan	..	..	..	1995	..	1996	..	..
Bangladesh	1991	1989	1990	1994	1990	1990	..	1994
Belarus	..	..	..	..	1988	1989	..	1993
Belgium	..	..	..	1996	1989	1989	..	1997
Benin	1993	..	..	1994	1993	1993	..	1994
Bolivia	1994	1986	1988	1995	1995	1995	1995	1995
Bosnia and Herzegovina	..	..	..	..	1992	..	1994	..
Botswana	1990	1986	1991	1994	1992	1992	1994	1996
Brazil	..	..	1988	1994	1990	1990	1994	1994
Bulgaria	..	..	1994	1995	1991	1991	1996	1996
Burkina Faso	1993	1994	..	1994	1989	1989	..	1993
Burundi	1994	1981	1989	..	..	..	..	..
Cambodia	1997	..	..	1996	..	..	..	1995
Cameroon	..	1989	1989	1995	1989	1989	1994	1995
Canada	1990	..	1994	1994	1988	1989	..	1993
Central African Republic	..	..	..	1995	..	1993	..	1995
Chad	1990	1982	..	1994	1989	1994	..	1994
Chile	..	1987	1993	1995	..	1990	..	1994
China	1994	..	1994	1994	1989	1991	1996	1993
Hong Kong, China	..	..	..	..	..	..	..	..
Colombia	..	1990	1988	1995	1990	1994	..	1995
Congo, Dem. Rep.	..	1986	1990	1995	1995	..	1994	1995
Congo, Rep.	..	..	1990	1997	1995	1995	..	1996
Costa Rica	1990	1987	1992	1994	1991	1991	1994	1994
Côte d'Ivoire	1994	..	1991	1995	1993	1993	1994	1995
Croatia	..	..	..	1996	1992	1991	1994	1997
Cuba	..	..	..	1994	1992	1992	1994	1994
Czech Republic	1991	..	..	1994	1993	1993	1996	1994
Denmark	1994	..	..	1994	1988	1989	..	1994
Dominican Republic	..	1984	1995	..	1993	1993	..	1994
Ecuador	1993	1987	1995	1994	1990	1990	..	1993
Egypt, Arab Rep.	1992	1992	1988	1995	1988	1989	1994	..
El Salvador	1994	1985	1988	1996	1993	1992	..	1994
Eritrea	1995	..	..	1995	..	..	..	1996
Estonia	..	..	..	1994	1997	1997	..	1994
Ethiopia	1994	..	1991	1994	1995	1995	..	1994
Finland	1995	..	..	1994	1988	1989	1996	1994
France	1990	..	..	1994	1988	1989	1996	1994
Gabon	..	..	1990	..	1994	1994	..	..
Gambia, The	1992	1981	1989	1994	1990	1990	1994	1994
Georgia	..	..	..	1994	1996	1996	1996	1994
Germany	..	..	..	1994	1988	1989	1994	1994
Ghana	1992	1985	1988	1995	1989	1989	1994	1994
Greece	..	..	..	1994	1989	1989	1995	1994
Guatemala	1994	1984	1988	1996	1988	1990	..	1995
Guinea	1994	1983	1988	1994	1992	1992	1994	1993
Guinea-Bissau	1993	..	1991	1996	..	..	1994	1996
Haiti	..	1985	..	1996	..	..	1996	1996
Honduras	1993	1989	..	1996	1994	1994	1994	1995

Table 3.14a

Status of national environmental action plans

Completed

Albania
Azerbaijan
Bangladesh
Belarus
Benin
Bhutan
Bolivia
Botswana
Bulgaria
Burkina Faso
Burundi
Cambodia
Cape Verde
China
Comoros
Congo, Rep.
Costa Rica
Côte d'Ivoire
El Salvador
Estonia
Ethiopia
Gambia, The
Georgia
Ghana
Grenada
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hungary
India
Indonesia
Kenya
Lao PDR
Latvia
Lebanon
Lesotho
Lithuania
Macedonia, FYR
Madagascar
Maldives
Mexico
Moldova
Mongolia
Montserrat
Mozambique
Nepal
Nicaragua
Nigeria
Pakistan
Papua New Guinea
Philippines
Poland
Romania
Rwanda
São Tomé and Principe
Senegal
Seychelles
Sierra Leone
Sri Lanka
St. Kitts and Nevis
Uganda
Ukraine
Zambia

Being prepared

Armenia
Djibouti
Dominican Rep.
Ecuador
Equatorial Guinea
Gabon
Kazakhstan
Korea, Rep.
Malaysia
Mali
Niger
Paraguay
Togo
Uzbekistan
Vietnam
Zimbabwe

Source: World Resources Institute, International Institute for Environment and Development, and IUCN, *1996 World Directory of Country Environmental Studies*; World Bank 1998d.

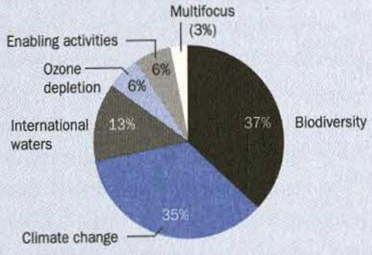
Government commitment 3.14

	Environmental strategy or action plan	Country environmental profile	Biodiversity assessment, strategy, or action plan	Participation in treaties[a]				
				Climate change	Ozone layer	CFC control	Law of the Sea[b]	Biological diversity
Hungary	1995	..	..	1994	1988	1989	..	1994
India	1993	1989	1994	1994	1991	1992	1995	1994
Indonesia	1992	1994	1993	1994	1992	1992	1994	1994
Iran, Islamic Rep.	..	..	..	1996	1991	1991	..	1996
Iraq	..	..	..	..	..	..	1994	..
Ireland	..	..	..	1994	1988	1989	..	1996
Israel	..	..	..	1994	1992	1992	..	1995
Italy	..	..	..	1994	1988	1989	1995	1994
Jamaica	1994	1987	..	1995	..	1993	1994	1995
Japan	..	..	..	1994	1988	1989	1996	1993
Jordan	1991	1979	..	1994	1989	1989	1995	1994
Kazakhstan	..	..	..	1995	..	..	..	1994
Kenya	1994	1989	1992	1994	1989	1989	1994	1994
Korea, Dem. Rep.	..	..	..	1995	1995	1995	..	1995
Korea, Rep.	..	..	..	1994	1992	1992	1996	1995
Kuwait	..	..	..	1995	1993	1993	1994	..
Kyrgyz Republic	..	..	..	..	..	..	..	1996
Lao PDR	1995	..	..	1995	..	..	..	1996
Latvia	..	..	..	1995	1995	1995	..	1996
Lebanon	..	..	..	1995	1993	1993	1995	1995
Lesotho	1989	1982	..	1995	1994	1994	..	1995
Libya	..	..	..	..	1990	1990	..	..
Lithuania	..	..	..	1995	1995	1995	..	1996
Macedonia, FYR	..	..	..	..	1994	1994	1994	..
Madagascar	1988	..	1991	1996	1997	1997	..	1996
Malawi	1994	1982	..	1994	1991	1991	..	1994
Malaysia	1991	1979	1988	1994	1989	1989	1997	1994
Mali	..	1991	1989	1995	1995	1995	1994	1995
Mauritania	1988	1984	..	1994	1994	1994	1996	1996
Mauritius	1990	..	..	1994	1992	1992	1994	1993
Mexico	..	..	1988	1994	1988	1989	1994	1993
Moldova	..	..	..	1995	1997	1997	..	1996
Mongolia	1995	..	..	1994	1996	1996	..	1993
Morocco	..	1980	1988	1996	1996	1996	..	1995
Mozambique	1994	..	..	1995	1994	1994	..	1995
Myanmar	..	1982	1989	1995	1994	1994	1996	1995
Namibia	1992	..	..	1995	1993	1993	1994	..
Nepal	1993	1983	..	1994	1994	1994	..	1994
Netherlands	1994	..	..	1994	1988	1989	1996	1994
New Zealand	1994	..	..	1994	1988	1989	1996	1993
Nicaragua	1994	1981	..	1996	1993	1993	..	1996
Niger	..	1985	1991	1995	..	1993	..	1995
Nigeria	1990	..	1992	1994	1989	1989	1994	1994
Norway	..	..	1994	1994	1988	1989	1996	1993
Oman	..	1981	..	1995	..	..	1994	1995
Pakistan	1994	1994	1991	1994	1993	1993	..	1994
Panama	1990	1980	..	1995	1989	..	1996	1995
Papua New Guinea	1992	1994	1993	1994	1993	1993	..	1993
Paraguay	..	1985	..	1994	1993	1993	1994	1994
Peru	..	1988	1988	1994	1989	1993	..	1993
Philippines	1989	1992	1989	1994	1991	1991	1994	1994
Poland	1993	..	1991	1994	1990	1990	..	1996
Portugal	1995	..	..	1994	1989	1989	..	1994
Puerto Rico	..	..	..	..	..	..	..	..
Romania	..	..	..	1994	1993	1993	1997	1994
Russian Federation	..	..	1994	1995	1988	1989	..	1995

Figure 3.14

Climate change and biodiversity at the fore

Distribution of project financing by the Global Environment Facility, February 1995–September 1998



Source: Global Environment Facility.

Between February 1995 and September 1998 the Global Environment Facility provided about $2 billion to developing and transition economies for projects and activities targeting global benefits in one or more focus areas: biodiversity, climate change, international waters, and ozone depletion.

3.14 Government commitment

	Environmental strategy or action plan	Country environmental profile	Biodiversity assessment, strategy, or action plan	Participation in treaties[a]				
				Climate change	Ozone layer	CFC control	Law of the Sea[b]	Biological diversity
Rwanda	1991	1987	..	..	..	..	..	1996
Saudi Arabia	..	..	..	1995	1993	1993	..	..
Senegal	1984	1990	1991	1995	1993	1993	1994	1995
Sierra Leone	1994	..	..	1995	..	..	1995	1995
Singapore	1993	1988	1995	..	1989	1989	1994	1996
Slovak Republic	..	..	..	1994	1993	1993	1996	1994
Slovenia	..	..	..	1996	..	1992	1994	1996
South Africa	1993	..	..	..	1990	1990	1994	1996
Spain	..	..	..	1994	1988	1989	..	1994
Sri Lanka	1994	1983	1991	1994	1990	1990	1994	1994
Sudan	..	1989	..	1994	..	1993	1994	1996
Sweden	..	..	..	1994	1988	1989	1996	1994
Switzerland	..	..	..	1994	1988	1989	..	1995
Syrian Arab Republic	..	1981	..	1996	1990	1990	..	1996
Tajikistan	..	..	..	..	..	..	..	..
Tanzania	1994	1989	1988	..	1993	1993	1994	1996
Thailand	..	1992	..	1995	1989	1989	..	..
Togo	1991	..	..	1995	1991	1991	1994	1996
Trinidad and Tobago	..	..	..	1994	1989	1989	1994	1996
Tunisia	1994	1980	1988	1994	1989	1989	1994	1993
Turkey	..	1982	..	..	1991	1991	..	..
Turkmenistan	..	..	..	1995	1994	1994	..	1996
Uganda	1994	1982	1988	1994	1988	1989	1994	1993
Ukraine	..	..	..	..	1988	1989	..	1995
United Arab Emirates	..	..	..	1996	1990	1990	..	..
United Kingdom	1995	..	1994	..	1988	1989	..	1994
United States	1995	..	1995	1994	1988	1989	..	..
Uruguay	..	..	..	1994	1989	1991	1994	1994
Uzbekistan	..	..	..	1994	1993	1993	..	1995
Venezuela	..	..	..	1995	1988	1989	..	1994
Vietnam	..	..	1993	1995	1994	1994	1994	1995
West Bank and Gaza	..	..	..	..	..	..	..	..
Yemen, Rep.	..	1990	1992	1996	1996	1996	1994	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..
Zambia	1994	1988	..	1994	1990	1990	1994	1993
Zimbabwe	1987	1982	..	1994	1993	1993	1994	1995

a. The year the treaty entered into force in that country. b. Convention became effective 16 November 1994.

Government commitment 3.14

About the data

National environmental strategies and participation in international treaties on environmental issues provide some evidence of government commitment to sound environmental management. But the signing of these treaties does not always imply ratification. Nor does it guarantee that governments will comply with treaty obligations.

In many countries efforts to halt environmental degradation have failed, primarily because governments have neglected to make this issue a priority, a reflection of competing claims on scarce resources. To address this problem, many countries are preparing national environmental strategies—some focusing narrowly on environmental issues, others integrating environmental, economic, and social concerns. Among such initiatives are conservation strategies and environmental action plans. Some countries have also prepared country environmental profiles and biological diversity strategies and profiles.

National conservation strategies—promoted by the World Conservation Union (IUCN)—provide a comprehensive, cross-sectoral analysis of conservation and resource management issues to help integrate environmental concerns with the development process. Such strategies discuss current and future needs, institutional capabilities, prevailing technical conditions, and status of natural resources in a country.

National environmental action plans (NEAPs), supported by the World Bank and other development agencies, describe a country's main environmental concerns, identify the principal causes of environmental problems, and formulate policies and actions to deal with them (table 3.14a). The NEAP is a continuing process in which governments develop comprehensive environmental policies, recommend specific actions, and outline the investment strategies, legislation, and institutional arrangements required to implement them.

Country environmental profiles identify how national economic and other activities can stay within the constraints imposed by the need to conserve natural resources. Some profiles consider issues of equity, justice, and fairness. Biodiversity profiles—prepared by the World Conservation Monitoring Centre and the IUCN—provide basic background on species diversity, protected areas, major ecosystems and habitat types, and legislative and administrative support. In an effort to establish a scientific baseline for measuring progress in biodiversity conservation, the United Nations Environment Programme (UNEP) coordinates global biodiversity assessments.

To address global issues, many governments have also signed international treaties and agreements, launched in the wake of the 1972 United Nations Conference on Human Environment in Stockholm and the 1992 United Nations Conference on Environment and Development (the Earth Summit) in Rio de Janeiro:

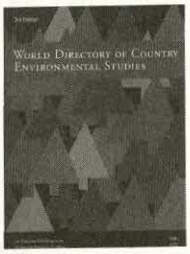
- The Convention on Climate Change aims to stabilize atmospheric concentrations of greenhouse gases at levels that will prevent human activities from interfering dangerously with the global climate.
- The Vienna Convention for the Protection of the Ozone Layer aims to protect human health and the environment by promoting research on the effects of changes in the ozone layer and on alternative substances (such as substitutes for chlorofluorocarbons) and technologies, monitoring the ozone layer, and taking measures to control the activities that produce adverse effects.
- The Montreal Protocol for CFC Control requires that countries help protect the earth from excessive ultraviolet radiation by cutting chlorofluorocarbon consumption by 20 percent over their 1986 level by 1994 and by 50 percent over their 1986 level by 1999, with allowances for increases in consumption by developing countries.
- The United Nations Convention on the Law of the Sea, which became effective in November 1994, establishes a comprehensive legal regime for seas and oceans, establishes rules for environmental standards and enforcement provisions, and develops international rules and national legislation to prevent and control marine pollution.
- The Convention on Biological Diversity promotes conservation of biodiversity among nations through scientific and technological cooperation, access to financial and genetic resources, and transfer of ecologically sound technologies.

To help developing countries comply with their obligations under these agreements, the Global Environment Facility (GEF) was created to focus on global improvement in biodiversity, climate change, international waters, and ozone layer depletion. The UNEP, United Nations Development Programme (UNDP), and World Bank manage the GEF according to the policies of its governing body of country representatives. The World Bank is responsible for the GEF Trust Fund and is chair of the GEF.

Definitions

• **Environmental strategies and action plans** provide a comprehensive, cross-sectoral analysis of conservation and resource management issues to help integrate environmental concerns with the development process. They include national conservation strategies, national environmental action plans, national environmental management strategies, and national sustainable development strategies. The years shown refer to the year in which a strategy or action plan was adopted. • **Country environmental profiles** identify how national economic and other activities can stay within the constraints imposed by the need to conserve natural resources. The years shown refer to the year in which a profile was completed. • **Biodiversity assessments, strategies, and action plans** include biodiversity profiles (see *About the data*). • **Participation in treaties** covers five international treaties (see *About the data*). **Climate change** refers to the Convention on Climate Change (signed in New York in 1992). **Ozone layer** refers to the Vienna Convention for the Protection of the Ozone Layer (signed in 1985). **CFC control** refers to the Montreal Protocol for CFC Control (formally, the Protocol on Substances That Deplete the Ozone Layer, signed in 1987). **Law of the Sea** refers to the United Nations Convention on the Law of the Sea (signed in Montego Bay, Jamaica, in 1982). **Biological Diversity** refers to the Convention on Biological Diversity (signed at the Earth Summit in Rio de Janeiro in 1992). The years shown refer to the year in which a treaty entered into force in a country.

Data sources



Data are from the World Resources Institute, UNEP, and UNDP's *World Resources 1994–95;* the World Resources Institute, International Institute for Environment and Development, and IUCN's 1996 *World Directory of Country Environmental Studies;* the World Bank's *1998 Catalog: Operational Documents as of July 31, 1998;* and the World Bank Environment Department's *National Environmental Strategies: Learning from Experience* (1996d).

3.15 Toward a measure of genuine savings

	Gross domestic savings % of GDP 1997	Consumption of fixed capital % of GDP 1997	Net domestic savings % of GDP 1997	Education expenditure % of GDP 1997	Energy depletion % of GDP 1997	Mineral depletion % of GDP 1997	Net forest depletion % of GDP 1997	Carbon dioxide damage % of GDP 1997	Genuine domestic savings % of GDP 1997
Albania	–13.2	12.4	–25.6	2.8	0.0	0.1	0.0	0.5	–23.5
Algeria	34.5	9.3	25.2	6.3	2.4	0.1	0.0	1.1	27.9
Angola	27.3	6.0	21.2	2.6	20.7	0.0	0.0	0.4	2.7
Argentina	18.4	10.5	7.9	2.4	0.5	0.0	0.0	0.2	9.6
Armenia	–28.8	..	..	0.0	0.0	0.0	0.0	1.3	..
Australia	20.7	14.6	6.1	4.7	1.2	1.5	0.0	0.4	7.6
Austria	23.5	12.9	10.5	4.9	0.1	0.0	0.0	0.1	15.2
Azerbaijan	9.5	14.0	–4.5	0.0	21.8	0.0	0.0	5.1	–31.4
Bangladesh	14.7	7.2	7.5	2.1	0.2	0.0	0.0	0.3	9.1
Belarus	21.6	17.2	4.4	4.7	0.0	0.0	0.0	1.7	7.4
Belgium	22.3	10.1	12.2	4.9	0.0	0.0	0.0	0.2	16.9
Benin	10.8	5.4	5.4	0.0	0.0	0.0	0.0	0.2	5.2
Bolivia	10.1	8.1	2.0	2.6	0.9	1.1	0.0	0.7	1.8
Bosnia and Herzegovina	..	..	..	..	0.0	0.0	0.0	..	..
Botswana	44.7	13.3	31.4	6.9	0.0	0.8	0.0	0.3	37.2
Brazil	18.6	7.5	11.1	4.2	0.6	0.7	0.0	0.2	13.9
Bulgaria	17.4	10.1	7.3	4.0	0.5	1.3	0.0	2.7	6.7
Burkina Faso	9.2	4.6	4.6	2.8	0.0	0.0	0.0	0.2	7.1
Burundi	2.6	4.4	–1.8	3.0	0.0	0.0	8.5	0.1	–7.4
Cambodia	4.2	5.0	–0.8	0.0	0.0	0.0	0.0	0.1	–0.9
Cameroon	20.6	7.5	13.1	2.3	7.4	0.0	0.0	0.3	7.7
Canada	21.5	12.5	9.0	6.1	1.5	0.4	0.0	0.4	12.8
Central African Republic	6.7	5.2	1.5	3.8	0.0	0.0	0.0	0.1	5.1
Chad	1.2	4.6	–3.4	0.0	0.0	0.0	0.0	0.0	–3.5
Chile	24.5	6.8	17.7	3.2	0.1	6.4	0.0	0.4	14.1
China	42.7	6.2	36.5	1.9	0.0	0.5	0.6	2.4	34.9
Hong Kong, China	30.6	..	..	2.0	0.0	0.0	0.0	0.1	..
Colombia	15.8	6.5	9.4	2.8	4.4	0.1	0.0	0.4	7.3
Congo, Dem. Rep.	9.0	5.0	4.0	0.7	0.0	0.6	0.0	0.2	3.8
Congo, Rep.	34.8	9.2	25.6	4.3	23.9	0.0	0.0	0.4	5.6
Costa Rica	25.0	2.5	22.5	4.6	0.0	0.0	0.0	0.3	26.8
Côte d'Ivoire	23.1	7.0	16.0	5.7	1.5	0.0	0.0	0.7	19.6
Croatia	3.3	9.2	–5.9	0.0	0.9	0.0	0.0	0.5	–7.3
Cuba	..	..	..	..	0.0	0.0	0.0	..	..
Czech Republic	28.4	17.2	11.2	5.3	0.4	0.0	0.0	1.3	14.8
Denmark	..	15.3	..	7.7	0.4	0.0	0.0	0.2	..
Dominican Republic	22.1	5.9	16.1	1.2	0.0	0.5	0.0	0.8	16.0
Ecuador	21.2	6.9	14.2	2.7	12.0	0.0	0.0	0.7	4.2
Egypt, Arab Rep.	13.0	7.9	5.1	4.8	3.2	0.1	0.0	0.7	5.9
El Salvador	4.5	6.1	–1.6	2.2	0.0	0.0	2.0	0.3	–1.6
Eritrea	–17.4	4.1	–21.5	..	0.0	0.0	0.0	..	..
Estonia	18.4	10.5	7.9	4.3	1.7	0.0	0.0	2.3	8.2
Ethiopia	8.7	..	..	2.9	0.0	0.0	0.0	0.3	..
Finland	24.6	16.7	7.9	7.2	0.0	0.0	0.0	0.2	14.8
France	19.7	12.9	6.8	5.0	0.0	0.0	0.0	0.1	11.6
Gabon	48.3	15.2	33.1	3.1	15.8	0.0	0.0	0.4	20.0
Gambia, The	3.8	12.3	–8.6	3.3	0.0	0.0	0.0	0.3	–5.6
Georgia	–3.7	..	..	0.0	0.0	0.0	0.0	0.9	..
Germany	22.4	13.2	9.2	4.4	0.1	0.0	0.0	0.2	13.4
Ghana	9.8	4.3	5.5	2.4	0.0	2.5	0.0	0.4	5.0
Greece	..	8.5	..	..	0.0	0.0	0.0	..	..
Guatemala	8.1	6.0	2.1	2.1	0.6	0.0	2.0	0.2	1.4
Guinea	18.7	6.1	12.6	2.3	0.0	18.8	0.0	0.2	–4.1
Guinea-Bissau	5.0	4.8	0.3	1.8	0.0	0.0	0.0	0.5	1.5
Haiti	–4.5	1.5	–6.0	2.3	0.0	0.0	7.4	0.1	–11.3
Honduras	21.8	6.0	15.8	3.7	0.0	0.2	0.0	0.4	18.8

Toward a measure of genuine savings 3.15

	Gross domestic savings % of GDP 1997	Consumption of fixed capital % of GDP 1997	Net domestic savings % of GDP 1997	Education expenditure % of GDP 1997	Energy depletion % of GDP 1997	Mineral depletion % of GDP 1997	Net forest depletion % of GDP 1997	Carbon dioxide damage % of GDP 1997	Genuine domestic savings % of GDP 1997
Hungary	26.9	8.0	18.9	5.2	0.4	0.1	0.0	0.7	23.0
India	20.0	10.0	10.0	4.3	2.6	0.5	2.3	1.6	7.4
Indonesia	30.6	5.0	25.6	0.9	3.8	0.8	0.7	0.9	20.5
Iran, Islamic Rep.	..	15.3	..	..	0.0	0.0	0.0	..	..
Iraq	..	9.0	..	..	0.0	0.0	0.0	..	..
Ireland	33.1	9.2	23.9	5.1	0.0	0.1	0.0	0.3	28.7
Israel	8.7	13.8	–5.1	6.7	0.0	0.1	0.0	0.3	1.3
Italy	22.3	12.4	9.9	4.2	0.1	0.0	0.0	0.2	13.9
Jamaica	21.6	6.4	15.2	4.4	0.0	12.5	0.0	1.1	6.0
Japan	30.5	15.8	14.6	5.8	0.0	0.0	0.0	0.1	20.3
Jordan	5.5	9.7	–4.2	3.4	0.0	1.2	0.0	1.1	–3.1
Kazakhstan	13.5	7.4	6.1	0.0	18.5	0.0	0.0	5.5	–17.9
Kenya	11.4	6.7	4.7	5.9	0.0	0.0	8.0	0.4	2.1
Korea, Dem. Rep.	..	..	..	..	0.0	0.0	0.0	..	..
Korea, Rep.	34.2	10.0	24.3	3.0	0.0	0.0	0.0	0.5	26.7
Kuwait	25.2	8.6	16.6	4.3	44.5	0.0	0.0	..	–23.6
Kyrgyz Republic	13.8	10.2	3.6	4.3	0.6	0.0	0.0	2.3	5.0
Lao PDR	11.4	5.5	5.8	1.8	0.0	1.4	0.0	0.1	6.2
Latvia	9.6	11.7	–2.1	6.5	0.0	0.0	0.0	1.2	3.1
Lebanon	–16.7	8.7	–25.5	1.5	0.0	0.0	0.1	0.5	–24.5
Lesotho	–9.8	8.3	–18.1	4.8	0.0	0.0	0.0	..	–13.3
Libya	..	..	..	..	0.0	0.0	0.0	..	..
Lithuania	16.0	7.1	8.9	4.4	0.0	0.0	0.0	1.0	12.3
Macedonia, FYR	3.5	..	..	5.7	0.0	0.0	0.0	..	..
Madagascar	3.6	4.9	–1.3	2.3	0.0	0.0	0.0	0.2	0.8
Malawi	2.1	6.4	–4.3	3.2	0.0	0.0	5.4	0.2	–6.7
Malaysia	44.4	9.3	35.1	4.8	4.1	0.1	2.1	0.7	32.9
Mali	13.6	5.8	7.8	2.8	0.0	0.0	0.0	0.1	10.5
Mauritania	8.5	8.6	–0.1	4.9	0.0	14.6	0.0	1.7	–11.5
Mauritius	24.1	7.7	16.4	3.1	0.0	0.0	0.0	0.2	19.3
Mexico	26.4	10.4	16.0	3.7	4.8	0.2	0.0	0.5	14.2
Moldova	0.3	..	..	5.0	0.0	0.0	0.0	2.8	..
Mongolia	17.5	7.6	9.9	5.9	0.0	9.6	0.0	6.2	0.1
Morocco	16.8	7.7	9.1	4.7	0.0	0.4	0.0	0.5	13.0
Mozambique	13.6	3.6	10.0	3.9	0.0	0.0	3.7	0.2	9.9
Myanmar	..	2.8	..	..	0.0	0.0	0.0	..	..
Namibia	14.2	13.8	0.4	1.7	0.0	0.6	0.0	..	1.5
Nepal	10.0	3.0	7.0	3.4	0.0	0.0	10.3	0.2	0.0
Netherlands	26.3	11.7	14.6	6.0	0.1	0.0	0.0	0.2	20.3
New Zealand	22.5	9.4	13.1	5.0	0.3	0.1	0.0	0.2	17.4
Nicaragua	2.8	6.3	–3.5	3.9	0.0	0.1	0.0	0.9	–0.6
Niger	3.3	4.5	–1.2	1.9	0.1	0.0	0.0	0.4	0.2
Nigeria	21.9	2.4	19.5	0.8	30.7	0.0	0.0	1.5	–12.0
Norway	..	16.4	..	6.7	5.9	0.0	0.0	0.2	..
Oman	..	..	..	..	0.0	0.0	0.0	..	..
Pakistan	10.4	6.4	4.0	1.9	1.1	0.0	1.5	0.8	2.5
Panama	32.0	7.2	24.8	5.0	0.0	0.0	0.0	0.4	29.5
Papua New Guinea	33.2	11.0	22.2	5.8	6.7	8.2	0.0	0.3	12.8
Paraguay	20.3	7.8	12.5	1.5	0.0	0.0	0.0	0.2	13.8
Peru	20.8	4.3	16.6	3.1	0.6	0.8	0.0	0.3	18.0
Philippines	14.5	9.0	5.5	3.1	0.0	0.2	1.3	0.4	6.7
Poland	18.1	8.9	9.3	5.7	0.6	0.3	0.0	1.7	12.5
Portugal	..	4.5	..	5.0	0.0	0.1	0.0	0.3	..
Puerto Rico	..	6.6	..	..	0.0	0.0	0.0	..	..
Romania	14.5	7.6	6.9	3.5	3.3	0.1	0.0	2.1	4.9
Russian Federation	24.7	19.3	5.3	4.1	9.3	0.0	0.0	1.8	–1.6

3.15 Toward a measure of genuine savings

	Gross domestic savings % of GDP 1997	Consumption of fixed capital % of GDP 1997	Net domestic savings % of GDP 1997	Education expenditure % of GDP 1997	Energy depletion % of GDP 1997	Mineral depletion % of GDP 1997	Net forest depletion % of GDP 1997	Carbon dioxide damage % of GDP 1997	Genuine domestic savings % of GDP 1997
Rwanda	–7.5	5.6	–13.1	3.2	0.0	0.1	0.0	0.2	–10.2
Saudi Arabia	34.6	10.0	24.6	5.8	43.6	0.0	0.0	1.0	–14.2
Senegal	13.2	5.3	7.9	4.1	0.0	0.4	0.0	0.4	11.1
Sierra Leone	–8.0	5.7	–13.8	2.5	0.0	3.6	0.0	0.2	–15.1
Singapore	51.2	13.2	38.1	2.2	0.0	0.0	0.0	0.5	39.8
Slovak Republic	28.4	15.4	12.9	5.0	0.0	0.0	0.0	1.3	16.6
Slovenia	23.1	16.9	6.2	7.1	0.0	0.0	0.0	0.4	12.9
South Africa	17.0	13.8	3.2	6.6	2.1	1.9	0.1	1.4	4.4
Spain	21.4	11.4	10.0	4.8	0.0	0.1	0.0	0.2	14.5
Sri Lanka	17.3	5.0	12.3	2.5	0.0	0.0	0.0	0.2	14.6
Sudan	..	5.5	..	2.6	0.0	0.0	0.0	0.2	..
Sweden	21.3	13.3	8.0	6.6	0.0	0.1	0.0	0.1	14.4
Switzerland	..	10.5	..	5.2	0.0	0.0	0.0	0.1	..
Syrian Arab Republic	19.0	3.5	15.5	2.8	22.5	0.1	0.0	1.6	–5.9
Tajikistan	..	5.3	..	..	0.0	0.0	0.0	..	..
Tanzania	3.4	2.8	0.6	2.9	0.0	0.0	0.0	0.2	3.2
Thailand	35.7	10.9	24.8	2.9	0.2	0.0	0.0	0.6	26.9
Togo	9.8	5.1	4.7	5.3	0.0	2.4	0.0	0.3	7.4
Trinidad and Tobago	29.1	11.2	17.9	4.1	10.8	0.0	0.0	1.8	9.4
Tunisia	24.2	8.7	15.4	6.0	2.4	0.7	0.4	0.5	17.3
Turkey	19.3	6.5	12.8	3.0	0.3	0.1	0.0	0.5	14.9
Turkmenistan	..	7.0	..	..	0.0	0.0	0.0	..	..
Uganda	7.5	5.0	2.5	2.6	0.0	0.0	3.4	0.1	1.6
Ukraine	16.3	18.4	–2.1	4.6	3.0	0.0	0.0	3.0	–3.4
United Arab Emirates	..	14.6	..	..	0.0	0.0	0.0	..	..
United Kingdom	15.1	10.4	4.8	4.5	0.8	0.0	0.0	0.3	8.2
United States	16.0	10.7	5.3	5.8	0.7	0.0	0.0	0.4	9.9
Uruguay	12.5	7.4	5.1	2.6	0.0	0.0	0.4	0.1	7.1
Uzbekistan	18.6	4.4	14.2	7.7	8.2	0.0	0.0	2.4	11.4
Venezuela	26.9	7.1	19.7	4.1	22.5	0.7	0.0	1.1	–0.4
Vietnam	21.1	5.0	16.2	1.4	4.0	0.1	3.4	0.8	9.2
West Bank and Gaza	..	..	..	..	0.0	0.0	0.0	..	..
Yemen, Rep.	12.8	7.7	5.1	3.9	34.7	0.0	0.0	..	–25.7
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	0.0	0.0	0.0	..	..
Zambia	9.8	9.9	–0.1	3.8	0.1	1.3	0.0	0.4	1.9
Zimbabwe	11.9	6.0	5.9	8.2	0.8	9.9	0.4	1.0	2.0
World	**22.2 w**	**11.7 w**	**10.5 w**	**5.0 w**	**1.2 w**	**0.1 w**	**0.1 w**	**0.4 w**	**13.6 w**
Low income	17.0	8.0	9.1	3.4	4.2	0.6	1.8	1.2	4.8
Middle income	26.2	9.2	17.0	3.5	3.8	0.5	0.2	1.1	15.0
Lower middle income	30.3	9.4	21.0	2.8	3.0	0.4	0.3	1.6	18.5
Upper middle income	22.4	9.1	13.2	4.1	4.5	0.6	0.1	0.6	11.6
Low & middle income	25.1	9.1	16.1	3.5	3.8	0.5	0.4	1.1	13.7
East Asia & Pacific	38.3	6.9	31.4	2.1	0.9	0.5	0.7	1.7	29.7
Europe & Central Asia	21.4	13.7	7.9	4.2	4.9	0.1	0.0	1.6	5.6
Latin America & Carib.	20.5	8.3	12.2	3.6	2.7	0.7	0.0	0.3	12.1
Middle East & N. Africa	24.1	8.8	15.3	5.2	19.7	0.1	0.0	0.9	–0.3
South Asia	18.2	9.1	9.1	3.8	2.1	0.4	2.0	1.3	7.1
Sub-Saharan Africa	16.8	9.1	7.8	4.5	5.9	1.4	0.5	0.9	3.4
High income	21.4	12.4	9.0	5.3	0.5	0.0	0.0	0.3	13.5
Europe EMU	22.1	12.5	9.5	4.7	0.1	0.0	0.0	0.2	14.0

Toward a measure of genuine savings 3.15

About the data

Genuine domestic savings are derived from standard national accounting measures of net domestic savings by making three types of adjustments. First, current expenditures on education are added to net domestic savings as an approximate value of investments in human capital (in standard national accounting these expenditures are treated as consumption). Next, estimates of the depletion of a variety of natural resources are deducted to reflect the decline in asset values associated with their extraction and harvest. Finally, a deduction is made for damage from carbon dioxide emissions.

There are important gaps in the accounting of natural resource depletion and costs of pollution. On the resource side, key estimates that are missing include the value of fossil water extracted from aquifers, depletion and degradation of soils, and net depletion of fish stocks. The most important pollutants affecting human health and economic assets are also excluded, because no internationally comparable data are widely available on damage from particulate emissions, ground-level ozone, or acid rain.

Estimates of resource depletion are based on the calculation of unit resource rents. An economic rent represents an excess return to a given factor of production. Because natural resources are fixed in extent (at least for a given state of technology), resource rents will persist over time; in contrast, for produced goods and services competitive forces will expand supply until economic profits are driven to zero. For each type of resource and each country, unit resource rents are derived by taking the difference between world prices and the average unit extraction or harvest costs (including a "normal" return on capital). Unit rents are then multiplied by the physical quantity extracted or harvested in order to arrive at a depletion figure. This figure is one of a range of depletion estimates that are possible, depending on the assumptions made about future quantities, prices, and costs, and there is reason to believe that it is at the high end of the range. Some of the largest depletion estimates in the table should therefore be viewed with caution.

A positive depletion figure for forest resources implies that the harvest rate exceeds the rate of natural growth, and a negative figure that growth exceeds harvest. In principle, there should be an addition to savings in countries where growth exceeds harvest, but there is good reason to believe that most of this net growth is in forested areas that cannot be exploited economically at present. The average world prices used to estimate unit rents on timber are probably too high for countries with low-grade timber resources, so caution is required in viewing some of the net forest depletion estimates, especially for Sub-Saharan Africa. In addition, because the depletion estimates reflect only timber values, they ignore all the external benefits associated with standing forests.

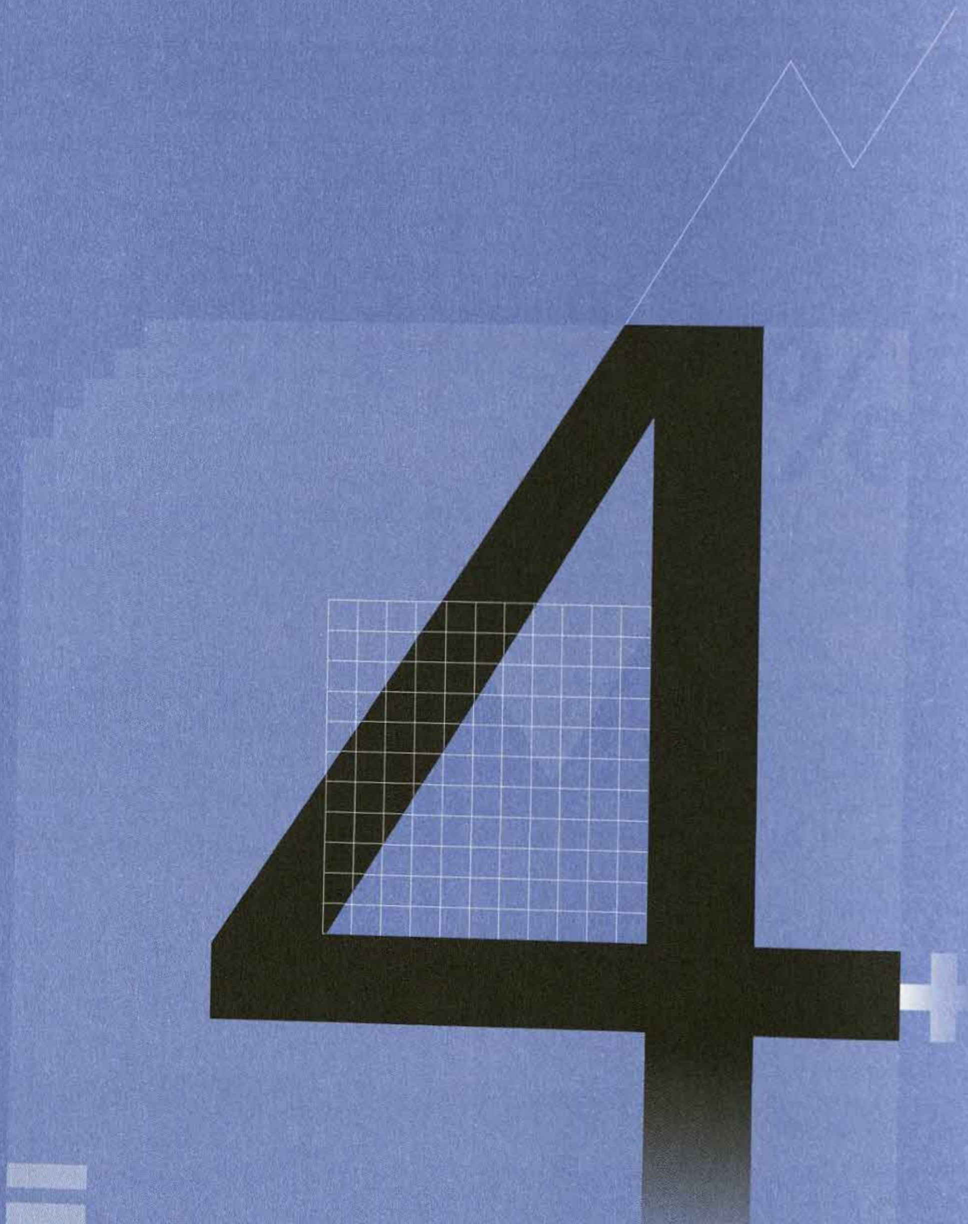
Pollution damage is calculated as the marginal social cost associated with a unit of pollution multiplied by the increase in the stock of pollutant in the receiving medium. For carbon dioxide the unit damage figure represents the present value of damage to economic assets and decline in human welfare over the time the unit of pollution remains in the atmosphere.

Definitions

• **Gross domestic savings** are calculated as the difference between GDP and public and private consumption. It therefore includes the value of both gross domestic investment and net foreign lending. • **Consumption of fixed capital** represents the replacement value of capital used up in the process of production. • **Net domestic savings** are equal to gross domestic savings less the value of consumption of fixed capital. • **Education expenditure** is the current operating expenditures in education, including wages and salaries and excluding capital investments in buildings and equipment. • **Energy depletion** is equal to the product of unit resource rents and the physical quantities of energy extracted. It covers crude oil, natural gas, and coal. • **Mineral depletion** is equal to the product of unit resource rents and the physical quantities of minerals extracted. It refers to bauxite, copper, iron, lead, nickel, phosphate, tin, gold, and silver. • **Net forest depletion** is calculated as the product of unit resource rents and the excess of roundwood harvest over natural growth. • **Carbon dioxide damage** is estimated to be $20 per ton of carbon (the unit damage) times the number of tons of carbon emitted. • **Genuine domestic savings** are equal to net domestic savings, plus education expenditure and minus energy depletion, mineral depletion, net forest depletion, and carbon dioxide damage.

Data sources

Gross domestic savings are derived from the World Bank's national accounts data files described in the *Economy* section. Consumption of fixed capital is from the United Nations' *National Accounts Statistics: Main Aggregates and Detailed Tables, 1996*, extrapolated to 1997. Education expenditure data are from the United Nations' *Statistical Yearbook*, extrapolated to 1997. The wide range of data sources and estimation methods used to arrive at resource depletion estimates are described in a World Bank working paper, "Estimating National Wealth" (Kunte and others 1998). The unit damage figure for carbon dioxide emissions is from Fankhauser (1995).


4

ECONOMY

What began in mid-1997 as a currency crisis in Thailand had by mid-1998 become a worldwide financial and economic crisis. Most observers failed to anticipate the breadth and extent of the crisis. A year ago World Bank economists predicted that GDP growth in developing countries would recover to 4 percent in 1998. In fact, it worsened to 1.9 percent. Yet the situation was not one of unrelieved gloom. GDP growth exceeded 5 percent in several Eastern European and African countries, as well as China and India. Most important, growth in the United States and Europe was robust and helped to counterbalance the recessionary forces from East Asia.

The weakening world economy

The financial crises that spread from East Asian countries reduced aggregate GDP by an estimated 8 percent in the five countries most affected—Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand. A long-maturing domestic financial crisis contributed to a 2–3 percent fall in output in Japan—further dimming prospects for neighboring countries and greatly magnifying the deflationary shock from Asia to the rest of the world. Weakening world demand fostered steep price declines for oil and other primary commodities, inflicting income losses on commodity exporters in every region. Low oil prices combined with the effects of policy and institutional weaknesses in Russia to provoke a run on the ruble, culminating in a default on foreign debt.

There followed a sudden, sharply increased aversion to risk in international capital markets. Private capital flows to previously less affected emerging markets in Latin America and other regions dried up. Interest rate spreads widened dramatically. And more currencies came under pressure, leading to a further marked deterioration in the growth prospects for developing countries.

In some countries natural disasters caused much more damage than financial contagion or falling commodity prices. El Niño brought Indonesia its worst drought in 50 years, parching crops and igniting forests. It also affected agriculture in southern Africa, the Sahel, Latin America, and South and Southeast Asia. Floods in China inflicted $50 billion of damage, while Hurricane Mitch devastated Honduras and Nicaragua.

World output growth fell from 3.2 percent in 1997 to 1.9 percent in 1998. The deceleration for developing countries was much steeper, from 4.8 percent to 1.9 percent, and per capita income growth plummeted to almost zero. Brazil, Indonesia, Russia, and 33 other developing countries—accounting for 42 percent of the GDP of developing countries—suffered a fall in their per capita incomes. The growth of world trade slid from 9–10 percent in 1997 to 4.8 percent in 1998.

Policy measures undertaken toward the end of the year promised to provide some support for an otherwise weak world economy in 1999. Among them: interest rate cuts in the United States and Europe, further fiscal stimulus and financial restructuring packages in Japan, IMF-led financial support for Brazil, and fresh financial support for the East Asian crisis countries.

Europe and Central Asia—Russia crashes but rapid transition countries stand firm

Russia's crisis was the main event in the region. Long-standing problems of poor governance and fiscal imbalances were aggravated by falling oil prices. East Asia's troubles undercut investor confidence, leading to a run on the ruble in August 1998, a run that an international support program could not stem. So Russia opted to devalue, restructure domestic debt, and put a moratorium on repayment of some foreign debt. Foreign confidence evaporated, and interest rate spreads across the region widened.

Despite all this, many countries in Central and Eastern Europe fared well in 1998, notably Hungary, Poland, Slovenia, and the Baltics. Their resilience is an important success story. As strong, early reformers in the region, they benefited from sound macroeconomic and trade policies. They also benefited from the prospect of integration with the European Union (EU), with the Czech Republic, Estonia, Hungary, Poland, and Slovenia shortlisted for accession. Their dependence on Russia as an export market was low, and foreign direct investment flowed in to establish production for export to the European Union.

A second group—slow transition countries—such as Kazakhstan, Romania, and Ukraine—fared poorly. They depended on their trade with Russia. Some were also hit by low commodity prices. Romania, Russia, and Ukraine suffered a decline in GDP in 1998, and recovery will not be quick.

The low-income countries in the region make up a diverse group with varying policies and outcomes. Albania and Georgia enjoyed GDP growth of around 10 percent, while Tajikistan and Uzbekistan fared poorly. Those depending on remittances from their workers in Russia were hit by the debacle there. In other countries structural reforms have withered, fiscal deficits were significant, and privatization was slow for want of buyers.

Latin America and the Caribbean—storm clouds gather

The region grew strongly in 1997 and early 1998, aided by foreign capital inflows averaging $100 billion a year. But it has been hit hard by the fall in commodity prices in the wake of the East Asian crisis and by the sharp downturn in private capital flows to developing countries after the Russian crisis in August 1998. Regional GDP growth slid from 5.2 percent in 1997 to an estimated 2.0 percent in 1998, and GDP may decline outright by almost 1 percent in 1999.

No country in the region suffered an Asian-style currency collapse, but the Brazilian real came under strong pressure, and eventually suffered sharp depreciation when it was floated in January 1999. The region's high current account deficits will need trimming, however. And total inflows into the region—half of which are foreign direct investment—may fall in 1999.

For the long term, the prospects are brighter. GDP growth could return to 4 percent a year by 2001. Foreign direct investment in the region is shifting away from traditional commodity sectors to manufacturing and services, where revenues are less volatile. The major risks are rising fiscal deficits (especially in Brazil), high dependence on commodity exports, relatively low domestic savings rates, and high levels of foreign debt.

Sub-Saharan Africa—Nigeria and South Africa pull down the region

GDP growth, after running at only 2 percent or so in the 1980s and early 1990s, recovered to 3.8 percent a year in 1994–97. And countries with three essentials—civil peace, macroeconomic stability, and good resource allocation—averaged 5.5 percent growth. But regional GDP growth fell to 2.1 percent in 1998. CFA countries averaged 5 percent growth, and Mauritius and Senegal fared even better. Slower growth in the region's two most populous countries—Nigeria and South Africa—pulled the average down.

So little private finance enters the region that it was not much affected by the global financial crisis, South Africa being the main exception. But the sharp fall in commodity prices delivered a regional terms-of-trade shock equal to 2 percent of GDP. The impact was greatest for oil exporters such as Nigeria, Gabon, and Angola. Civil war tore apart the Democratic Republic of the Congo, with Uganda, Rwanda, Zimbabwe, and Angola all drawn into the conflict. War and civil unrest also disrupted Ethiopia, Eritrea, Guinea-Bissau, Lesotho, and Sierra Leone.

Political stability, macroeconomic stability, and good resource allocation have proved a winning combination. Foreign direct investment, though modest, has helped complete almost 3,000 privatizations worth $3 billion in recent years. If civil conflict can be contained, the higher growth in recent years should prove sustainable.

Middle East and North Africa—oil-dependent countries suffer, diversifiers thrive

GDP growth fell to 1.5 percent in 1998, and per capita income fell 0.5 percent. The region's oil exporters had a 24 percent deterioration in their terms of trade. The GDP of sparsely populated oil exporters (Oman, Saudi Arabia) contracted 2.5 percent, while that of densely populated oil exporters (Algeria, Iran) stagnated. By contrast, growth held up fairly well (3.5–4 percent) in diversified economies (Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia). But even they were hurt by a drop in workers' remittances and aid from the Gulf.

The global financial crisis reduced access of the diversified economies to international capital. Egypt, Lebanon, and Morocco had been able to raise $1.5 billion in long-term financing in 1997, but such financing dried up in 1998. Foreign interest in equity markets also fell.

The region's growth should recover to 3–4 percent a year in the next decade. Some diversified economies have signed agreements with the European Monetary Union (and others are negotiating them) under the Euro-Mediterranean Initiative. Providing for a phased lowering of trade and investment barriers and for EU assistance for institutional modernization and adjustment, the agreements should do much to improve growth.

South Asia—insulated from contagion

Having opened to the global economy only recently, South Asia was insulated from the East Asian meltdown. But its export growth and its ability to raise project finance declined—compounded by G-8 sanctions on India and Pakistan after they tested nuclear devices in March 1998 (sanctions partially lifted in November). Pakistan came close to default on its foreign debt, and its freezing of offshore accounts discouraged fresh inflows. Bangladesh was hit by floods.

The region's GDP growth slowed from 6.9 percent in 1996 to 5.0 percent in 1997 and an estimated 5.2 percent in 1998. Even so, the region was a stabilizing influence in Asia. Regional GDP growth should recover to 5–6 percent a year in the next decade. The main risks are domestic: more political will is needed to accelerate economic reforms.

East Asia—no quick recovery from a financial typhoon

The downturn in the five most affected East Asian countries was far deeper than anticipated. Indonesia's GDP decline of 15 percent was one of the sharpest in history. Industrial output in Indonesia and Thailand declined 20 percent or more. The large deficits in the current accounts of the East Asia-5 turned to surpluses, a turnaround of $117 billion. Currency depreciations helped export volumes grow 15–25 percent, but low export prices meant that dollar earnings stagnated, hurting the ability of companies to service their foreign debt.

Even so, the contraction in Korea and Thailand slowed by late 1998. Interest rates declined below their precrisis levels. Equity markets rallied. And unexpectedly large trade surpluses helped rebuild foreign exchange reserves (Korea hit its target of $41 billion four months ahead of schedule). Foreign direct investment flows came back in selectively, notably for purchasing equity in the region's banks. Korea and the Philippines are expected to start growing again in 1999, but the outlook for the others is less clear. GDP growth for the East Asia-5 as a group is still projected to be about zero in 1999.

China withstood most of the financial storm in 1998. Its GDP growth slowed from 8.8 percent in 1997 to 7.8 percent in 1998, but should recover in 1999. Foreign direct investment declined only slightly, from $44 billion in 1997 to $42 billion in 1998. Speculation about devaluation led to some capital flight, but foreign exchange reserves remained a healthy $140 billion.

And now, global recovery or recession?

Gradual economic recovery is possible in 1999, but stagnation seems more likely. The latest estimates suggest that world GDP growth could edge downward from 1.9 percent in 1998 to 1.8 percent in 1999. Developing country growth should decelerater further to 1.6 percent in 1999, but could recover to more than 5 percent in 2001–07.

However, there is a substantial danger: the world economy could fall into serious recession instead. The risks include a deepening of the Japanese recession, a further loss of confidence halting capital flows to Latin America, and a sharp fall in American and European stock markets, where price-earnings ratios are high.

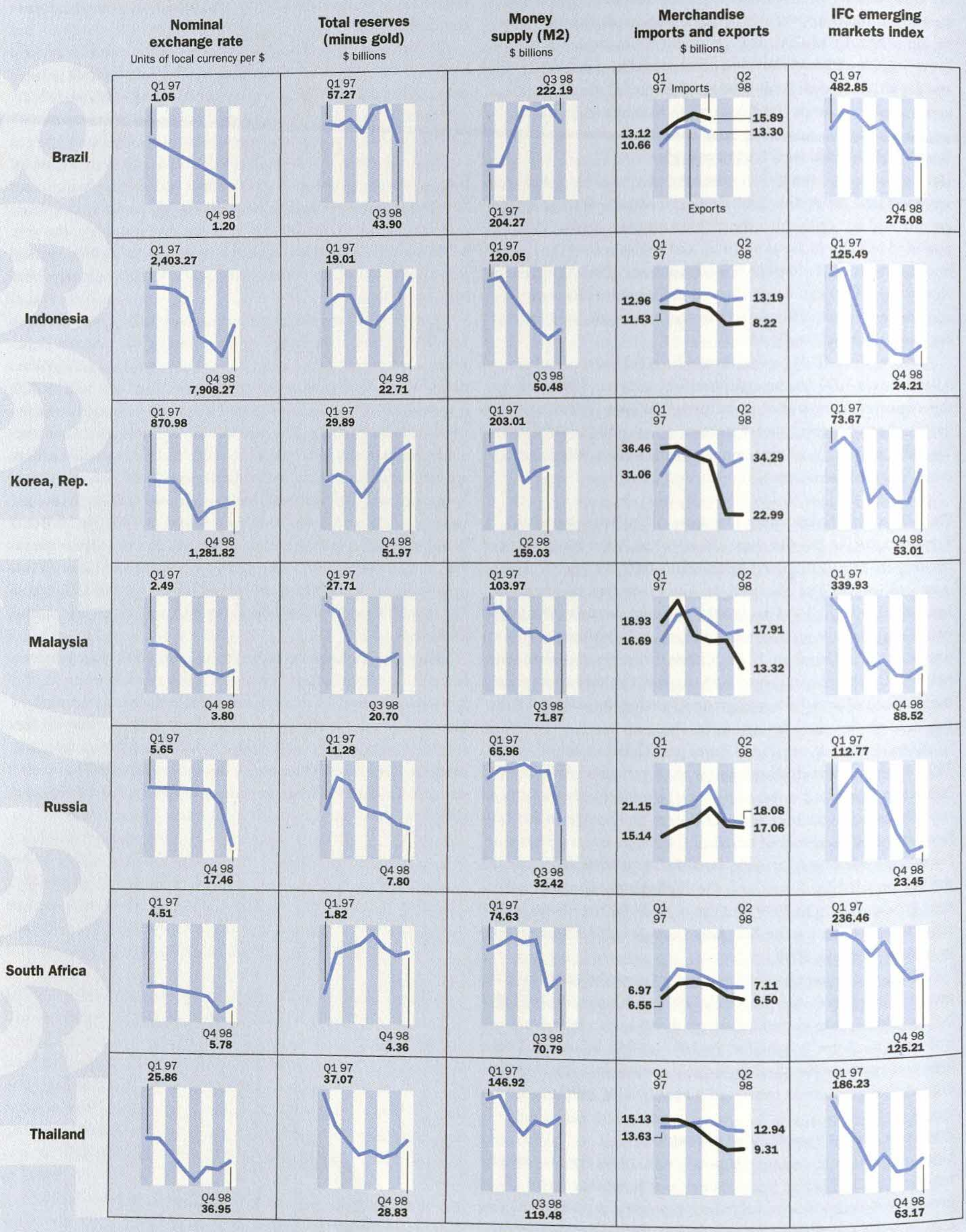
Japan is taking steps to revive demand and restructure its troubled financial system, but difficulties in implementation may hamper progress. Domestic demand could contract, and business confidence could fall further. Now strengthening, the yen could weaken again. With Japan as a major export destination for the crisis-hit countries of Asia, a setback to Japan could also be a setback to them.

Private flows to emerging markets have fallen sharply since Russia declared a moratorium on servicing its external debt. Brazil's troubles have worsened investor confidence. Creditor-debtor workouts have not gathered momentum in Russia and in several Asian countries. So capital flows to developing countries could continue falling. The region most at risk: Latin America.

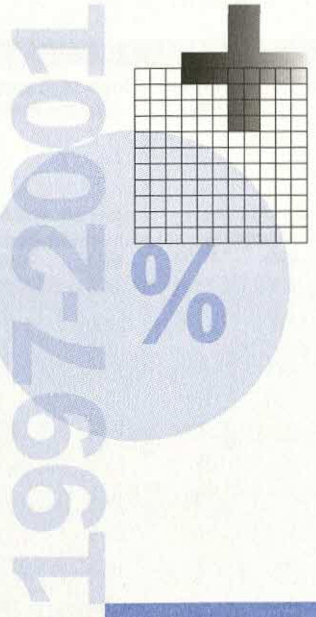
Some experts believe that U.S. and European stock markets are overvalued and that they could slide by 20–30 percent. If this happens, many investors will feel poorer and reduce their consumption, while business confidence would also fall. Such a burst of a stock market bubble could, along with hits to other regions, lead the global economy into recession. That would slow developing country growth further—to just 0.7 percent in 1999—and the terms of trade of commodity exporters would deteriorate even more.

Is a global recession avoidable? Yes, with good management. Interest rate cuts helped revive slumping stock markets in the United States and Europe in late 1998. Reforms to strengthen financial systems and supervision—along with quicker debtor-creditor workouts—could revive confidence in developing countries. So could changes in the architecture of the international financial system to reduce excessive risk-taking and volatility.

Shock waves from East Asia reverberated around the world



Source: International Monetary Fund, International Financial Statistics database; International Finance Corporation, Emerging Markets database.

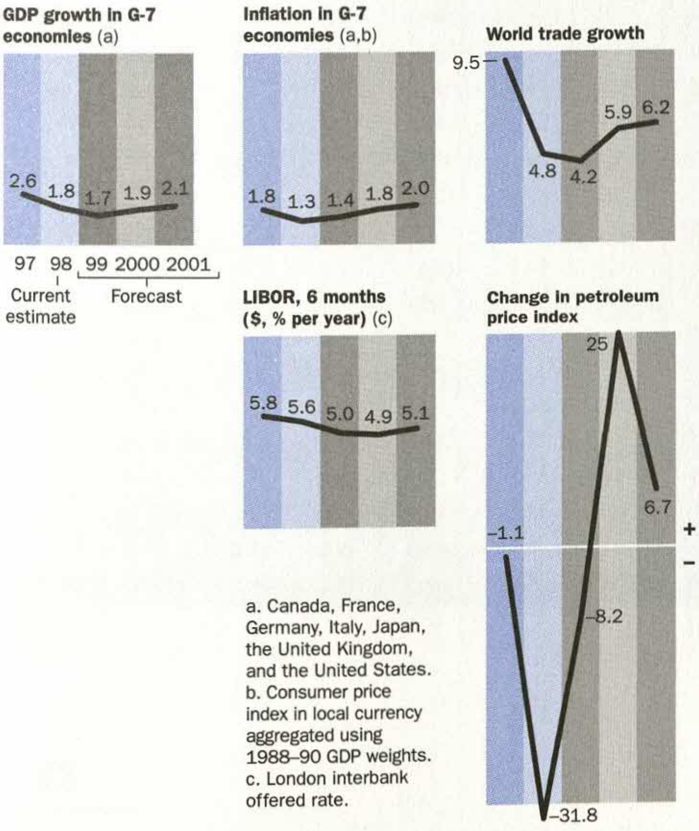


After plunging in 1998, developing country growth will slow further in 1999 but then begin to recover. However, there is a substantial danger: the world economy could still fall into a serious recession.

Weak growth in Japan and Europe and a global decline in commodity prices hurt the prospects for many developing countries.

External environment for developing country growth

Average annual percentage change, except for LIBOR

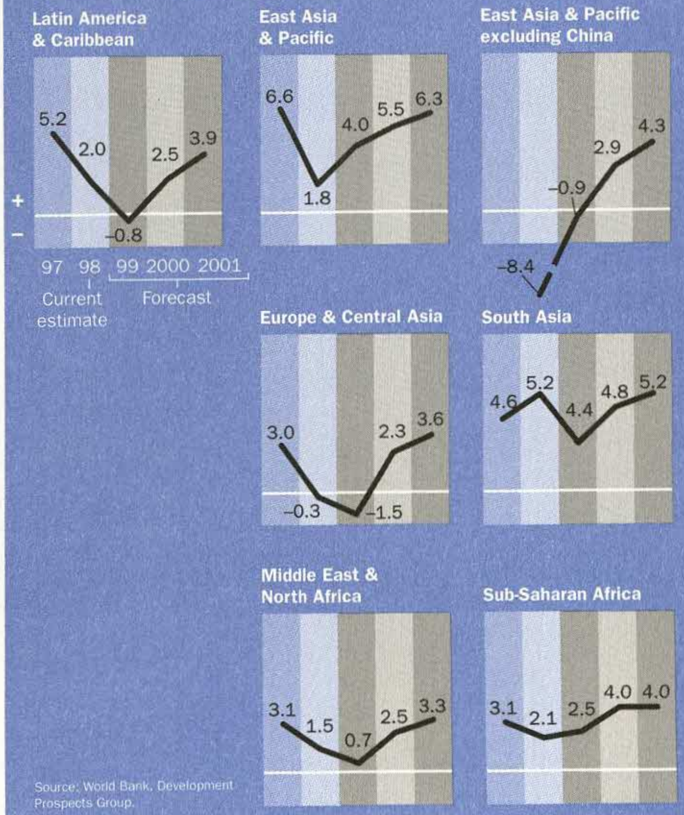


a. Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.
b. Consumer price index in local currency aggregated using 1988–90 GDP weights.
c. London interbank offered rate.

Growth in developing countries will remain low in 1999, and full recovery may not occur until the next century.

Growth of developing country GDP

Annual percentage change in GDP



Source: World Bank, Development Prospects Group.

Table 4a Recent economic performance

	Gross domestic product		Exports of goods and services		Imports of goods and services		GDP deflator		Current account balance		Gross international reserves	
	average annual % growth		average annual % growth		average annual % growth		% growth		% of GDP		$ millions	months of import coverage
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1998	1998
Algeria	1.3	3.1	8.8	2.0	5.7	14.3	6.3	5.5	..	–3.3	8,138	6.9
Argentina	8.6	4.8	12.1	7.3	27.6	10.4	0.2	1.1	–3.1	–4.3	..	..
Armenia	3.1	6.9	1.2	5.5	2.3	1.9	17.3	11.6	–18.6	–17.4	290	3.5
Bangladesh	5.9	5.6	14.2	13.3	1.7	6.6	1.3	4.0	–2.2	–1.9	1,750	2.5
Bolivia	4.2	4.7	–0.5	6.8	10.3	6.5	5.4	7.3	–8.8	–9.1	1,145	5.7
Brazil	3.2	0.5	1.8	–2.4	13.9	–4.9	7.8	3.3	–4.1	–4.5	44,556	10.0
Bulgaria	–6.9	4.5	7.1	–0.4	–4.4	1.1	951.0	23.0	4.4	–0.6	3,052	5.9
Cameroon	5.1	5.0	11.5	4.7	19.5	7.3	2.7	1.2	–1.3	–2.4	..	..
Chile	7.1	4.2	9.9	6.0	14.8	9.8	5.8	5.4	–5.3	–7.2	15,518	7.1
China	8.8	7.8	27.6	4.6	13.1	1.5	1.2	–1.8	3.3	2.7	..	..
Colombia	3.1	2.5	8.1	7.4	9.6	6.9	19.3	17.0	–5.9	–6.8	8,139	4.2
Congo, Rep.	–1.9	8.0	10.8	8.8	–28.2	–3.4	5.7	–11.1	–11.0	–11.5	..	..
Costa Rica	3.2	6.2	4.4	13.1	14.4	18.3	14.5	12.3	–2.7	–2.9	995	2.4
Côte d'Ivoire	6.0	5.6	13.4	3.5	18.4	5.2	3.2	3.3	0.3	–4.4	1,179	2.9
Croatia	6.5	3.0	..	..	..	..	4.2	6.0	–12.5	–7.8	2,815	3.1
Dominican Republic	8.2	7.0	11.4	10.5	15.2	29.0	8.3	5.0	..	–3.3	455	0.7
Ecuador	3.4	0.8	3.6	–16.0	6.4	7.2	25.9	35.9	–3.8	–7.4	2,079	3.8
Egypt, Arab Rep.	5.5	5.7	2.4	4.1	1.9	16.4	5.9	5.6	3.8	–2.5	20,284	10.9
El Salvador	4.0	3.8	21.3	11.5	8.1	19.5	4.6	3.9	0.9	–1.0	1,869	5.0
Estonia	11.4	5.0	28.2	11.4	25.5	8.3	11.4	9.5	–12.0	–10.4	..	..
Gabon	4.1	2.1	3.6	–2.7	15.0	–7.5	–0.1	–8.8	..	–1.7	..	..
Ghana	4.2	4.5	–0.4	14.4	14.7	8.3	19.5	12.5	..	–8.7	..	..
Guatemala	4.3	4.7	10.2	8.5	19.5	17.1	8.4	7.5	–3.5	–5.4	1,369	3.3
Hungary	4.6	4.9	26.4	18.0	25.5	18.8	18.4	13.6	–2.2	–3.6	8,825	3.2
India	5.2	5.2	6.4	6.0	3.4	15.4	5.5	8.0	–1.5	–2.2	28,435	5.0
Indonesia	4.9	–13.0	7.8	2.5	14.7	–21.5	12.0	80.0	–2.3	4.5	21,431	..
Iran, Islamic Rep.	..	1.7	..	–2.5	..	2.3	..	16.4	..	..	4,194	2.7
Jamaica	–2.4	–0.9	–5.6	3.2	1.4	2.0	11.2	9.2	–9.1	–1.3	692	2.0
Jordan	1.7	–0.6	1.5	4.9	–0.7	4.6	2.7	3.7	–2.9	–5.1	1,834	3.9
Kazakhstan	1.7	–1.5	2.2	7.8	7.2	–0.2	16.1	2.1	–4.1	–5.1	2,386	3.4
Kenya	2.1	2.7	–12.0	5.1	–2.4	4.8	11.6	9.6	–3.7	–2.9	..	..
Latvia	6.6	4.0	13.5	–1.2	9.0	4.1	6.5	4.0	–6.2	–9.9	791	..
Lebanon	4.0	5.0	9.2	14.6	4.2	5.9	8.5	8.0	–23.3	–22.8	11,362	14.5

continues on page 186

Table 4b Key macroeconomic indicators

	Nominal exchange rate			Real effective exchange rate		Money and quasi money		Gross domestic credit		Real interest rate		Short-term debt[a]
	local currency units per $	% change		1990 = 100		average annual % growth		average annual % growth		%	%	% of exports
	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997
Algeria	60.4	4.0	3.3	61.9	63.1	18.6	..	9.8	..	..	..	1.0
Argentina	1.0	0.0	0.0	..	..	25.5	9.2	15.7	9.2	9.0	9.4	52.9
Armenia	522.0	13.8	5.5	104.8	115.7	29.6	..	8.3	..	31.5	..	4.6
Bangladesh	48.5	7.1	6.7	..	..	9.8	10.2	12.3	12.1	12.5	..	2.6
Bolivia	5.6	3.5	5.2	99.2	101.9	16.5	..	22.3	..	42.4	24.3	29.3
Brazil	1.2	7.4	8.3	..	..	18.4	6.2	16.3	11.7	..	..	54.3
Bulgaria	1,675.1	264.5	–5.7	105.1	124.9	362.1	13.5	155.5	–11.7	–82.5	..	12.0
Cameroon	562.2	14.3	–6.1	64.3	64.9	18.6	4.6	5.7	16.7	..	..	52.1
Chile	473.8	3.5	7.7	135.3	130.1	16.3	10.9	14.3	12.4	9.3	14.0	45.9
China	8.3	–0.2	0.0	89.4	85.6	20.7	..	19.7	..	7.3	..	14.6
Colombia	1,507.5	28.7	16.5	161.1	154.2	41.9	25.4	42.0	35.9	12.5	24.7	33.8
Congo, Rep.	562.2	14.3	–6.1	..	..	9.5	0.1	14.3	16.6	..	..	41.7
Costa Rica	271.4	11.0	11.1	104.8	104.1	16.4	..	33.8	..	7.0	8.2	11.3
Côte d'Ivoire	562.2	14.3	–6.1	69.3	73.3	8.2	..	8.1	..	..	..	53.6
Croatia	6.2	13.8	–0.9	99.7	100.2	37.7	12.1	15.5	22.9	..	..	6.0
Dominican Republic	15.8	2.2	9.9	121.0	117.5	24.3	18.3	26.5	23.3	11.7	21.0	10.0
Ecuador	6,825.0	21.8	54.1	138.1	137.3	32.8	37.8	46.5	59.6	13.6	17.4	33.9
Egypt, Arab Rep.	3.4	0.0	0.0	..	..	10.8	7.3	15.9	15.6	7.5	9.2	13.9
El Salvador	8.8	0.0	0.0	..	..	18.8	20.1	20.4	9.2	11.0	10.3	20.4
Estonia	13.4	15.2	–6.5	..	..	37.8	8.0	83.3	23.5	7.6	6.5	8.3
Gabon	562.2	14.3	–6.1	53.5	54.9	11.3	6.2	14.4	12.9	..	..	14.6
Ghana	..	29.5	..	84.4	91.2	45.5	..	70.9	..	..	..	39.6
Guatemala	6.8	3.5	10.9	..	..	–4.2	–10.1	1.7	1.1	9.5	7.8	31.3
Hungary	219.0	23.4	7.6	132.3	130.6	..	..	..	..	2.8	..	13.0
India	42.5	9.3	8.1	..	..	17.7	15.2	11.9	12.8	7.9	..	9.1
Indonesia	8,025.0	95.1	72.6	..	..	25.2	67.4	25.7	47.1	8.8	..	54.7
Iran, Islamic Rep.	1,750.9	0.3	–0.2	101.9	125.2	23.7	..	13.7	..	..	..	17.2
Jamaica	36.9	4.2	2.8	..	..	13.3	10.2	42.3	30.8	22.5	21.7	17.3
Jordan	0.7	0.0	0.0	..	..	7.6	..	1.7	..	9.3	..	13.3
Kazakhstan	83.8	3.1	10.9	..	..	24.1	–14.5	–2.8	29.0	..	..	4.5
Kenya	61.9	13.9	–1.2	..	..	16.8	8.3	21.2	..	16.7	..	26.6
Latvia	0.6	6.1	–3.6	..	..	37.8	8.7	35.6	33.5	8.2	..	2.1
Lebanon	1,508.0	–1.6	–1.2	..	..	19.6	16.6	32.6	25.7	10.9	..	35.2

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Table 4a Recent economic performance

	Gross domestic product		Exports of goods and services		Imports of goods and services		GDP deflator		Current account balance		Gross international reserves	
	average annual % growth		average annual % growth		average annual % growth		% growth		% of GDP		$ millions	months of import coverage
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1998	1998
Lithuania	5.7	5.5	..	..	..	..	14.9	4.0	–10.2	–13.5	1,398	2.4
Malawi	5.1	4.0	12.9	1.1	11.9	–0.8	13.4	17.7	..	–18.0	277	4.0
Malaysia	7.8	–6.7	9.8	1.7	10.1	–10.5	2.9	5.4	–4.9	7.3	23,206	..
Mauritius	5.0	5.3	4.3	4.7	7.3	3.3	5.9	6.0	–2.6	–1.4	..	..
Mexico	7.0	4.6	13.0	9.0	22.0	11.8	19.0	18.6	–1.8	–3.8	28,524	2.2
Moldova	1.3	–6.0	11.1	–14.1	21.3	–1.3	11.6	8.0	–15.8	–19.6	157	..
Morocco	–2.0	6.7	6.3	3.5	1.6	8.5	2.0	2.9	–0.3	..	4,590	4.1
Nigeria	3.9	–1.0	1.2	–4.4	53.6	–6.0	10.2	10.0	1.4	–8.6	2,536	1.9
Pakistan	–0.4	5.3	–6.5	3.2	–1.4	–15.5	11.4	9.0	–6.0	–2.9	1,141	1.1
Panama	4.4	4.0	12.8	–4.9	15.0	4.8	2.0	0.9	–3.0	–4.4	1,151	2.9
Papua New Guinea	–6.5	2.5	1.7	10.4	5.5	2.5	2.4	13.1	–12.5	–3.6	194	1.7
Paraguay	3.5	0.3	2.0	..	6.8	..	8.0	11.9	–4.7	–2.9	606	1.7
Peru	7.2	0.7	13.0	0.6	11.3	3.9	8.4	6.2	–5.3	–6.4	10,074	9.3
Philippines	5.2	–0.5	17.5	–7.7	14.4	–10.2	6.1	10.4	–5.2	1.1	10,800	..
Poland	6.9	5.3	15.2	17.5	20.2	26.3	14.8	11.2	–4.2	–3.7	23,470	6.0
Romania	–6.6	–5.5	2.1	–7.2	–4.6	4.4	146.7	42.0	–6.7	–8.0	2,603	2.5
Russian Federation	0.8	–5.0	5.1	–0.2	12.0	–13.1	16.6	26.8	0.6	–0.9	12,029	1.6
Sierra Leone	–20.2	0.7	–25.3	83.5	–50.3	112.1	16.8	26.9	..	0.2	..	..
Slovak Republic	6.5	5.0	6.0	17.2	–2.3	24.1	6.7	6.0	–7.0	–10.5	2,957	2.2
South Africa	1.7	1.0	5.3	3.6	4.6	–1.0	7.8	10.0	–1.5	0.0	12,172	4.1
Sri Lanka	6.4	5.0	11.6	2.6	10.5	7.2	9.0	9.0	–2.6	–2.8	2,029	..
Syrian Arab Republic	4.0	5.0	–7.5	2.0	4.0	5.0	8.5	7.0	3.2	–5.0	9,880	15.5
Thailand	–0.4	–8.0	6.6	5.6	–10.0	–21.5	5.4	8.0	–2.0	..	..	..
Trinidad and Tobago	3.2	3.2	3.9	4.0	50.6	3.9	4.2	5.7	..	–11.5	919	3.0
Tunisia	5.4	5.0	10.6	3.5	8.7	14.4	4.2	3.7	–3.4	..	2,451	3.0
Turkey	7.7	3.0	19.1	8.7	22.4	2.1	81.2	69.0	–1.4	0.0	31,836	6.2
Ukraine	–3.2	–1.5	..	–6.6	..	–8.2	17.2	13.0	–2.7	–2.8	1,203	0.7
Uruguay	5.1	2.6	13.1	4.3	13.2	10.3	17.7	9.2	–1.6	–2.0	2,303	5.1
Uzbekistan	5.4	2.8	..	–10.8	..	–22.2	67.6	32.5	–2.3	–2.0	1,021	3.5
Venezuela	5.1	–1.0	10.0	–10.5	18.3	12.1	38.6	27.0	5.4	–1.0	14,736	7.0
Zambia	3.5	–2.0	18.9	–9.8	22.6	–5.8	25.5	23.2	–11.3	–16.0	..	..
Zimbabwe	3.2	2.4	2.6	–1.8	22.8	–6.3	21.0	30.0	–9.3	–8.6	298	1.7

Note: Data for 1998 are preliminary.
Source: World Bank staff estimates.

Table 4b **Key macroeconomic indicators**

	Nominal exchange rate			Real effective exchange rate		Money and quasi money		Gross domestic credit		Real interest rate		Short-term debt[a]
	local currency units per $	% change		1990 = 100		average annual % growth		average annual % growth		%	%	% of exports
	1998	**1997**	**1998**	**1997**	**1998**	**1997**	**1998**	**1997**	**1998**	**1997**	**1998**	**1997**
Lithuania	4.0	0.0	0.0	..	..	34.1	16.7	25.2	19.5	–0.4	9.3	3.1
Malawi	43.9	38.5	106.7	91.8	50.1	2.1	..	12.4	..	13.1	..	4.3
Malaysia	3.8	53.9	–2.4	104.5	82.8	17.5	0.3	29.2	–2.0	6.5	..	15.7
Mauritius	24.0	22.0	9.4	..	..	16.4	9.4	25.9	21.7	12.3	..	19.1
Mexico	9.9	3.0	22.0	..	..	34.6	19.0	–0.1	35.7	4.7	8.5	21.7
Moldova	6.2	0.2	33.7	105.8	119.4	34.5	–12.9	26.8	22.4	19.5	..	1.9
Morocco	9.3	10.4	–4.7	114.1	116.6	8.1	..	8.0	..	..	..	2.0
Nigeria	21.9	0.0	0.0	171.3	209.7	16.9	..	–2.6	..	9.3	..	30.4
Pakistan	46.0	9.8	4.4	94.7	91.3	19.9	11.5	9.3	13.0	..	..	21.5
Panama	1.0	0.0	0.0	..	..	15.0	..	9.4	..	..	..	8.0
Papua New Guinea	2.1	30.0	26.3	93.6	71.4	7.7	..	24.4	..	7.9	..	6.2
Paraguay	2,865.0	15.0	16.9	124.1	112.9	9.2	..	27.3	..	17.6	..	11.3
Peru	3.2	5.0	15.8	..	..	30.8	18.2	73.4	40.7	19.9	25.6	71.9
Philippines	39.1	52.1	–2.3	128.8	105.4	26.1	..	30.2	..	9.6	..	24.0
Poland	3.5	22.3	–0.4	216.2	214.0	29.2	22.4	26.4	24.7	8.9	..	9.1
Romania	10,951.0	98.8	36.5	..	..	105.0	40.4	50.7	69.3	..	..	9.4
Russian Federation	20.7	7.2	246.5	129.0	80.2	29.5	26.8	24.1	58.0	13.3	14.2	5.9
Sierra Leone	1,612.4	46.7	25.8	122.8	88.9	47.1	..	10.8	..	6.1	..	95.3
Slovak Republic	36.5	9.1	6.8	112.8	102.1	8.7	8.1	34.4	–0.6	11.3	..	38.1
South Africa	5.9	4.0	20.4	96.6	85.7	17.8	..	16.2	..	11.3	..	29.4
Sri Lanka	67.8	8.1	10.6	..	..	13.8	8.4	6.7	14.3	2.8	..	7.2
Syrian Arab Republic	11.2	0.0	0.0	..	..	–48.3	..	..	..	..	..	75.8
Thailand	36.7	84.5	–22.3	..	..	16.5	11.4	32.3	2.3	7.8	..	45.7
Trinidad and Tobago	6.3	1.7	–0.3	84.4	88.2	11.3	17.6	18.2	2.0	10.7	11.2	20.6
Tunisia	1.1	14.9	–4.1	103.9	103.6	16.5	6.2	15.0	12.1	..	..	17.4
Turkey	314,464.0	90.8	52.9	..	..	97.5	..	93.4	..	..	..	39.0
Ukraine	3.4	0.5	80.5	133.6	126.4	33.9	25.3	32.5	52.4	27.2	..	5.3
Uruguay	10.7	15.2	8.4	168.4	169.6	28.4	..	27.9	..	45.7	41.8	39.6
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	10.5
Venezuela	564.5	5.8	11.9	154.5	194.6	58.5	1.7	36.4	18.5	–14.1	..	15.9
Zambia	..	13.0	..	117.0	108.7	23.8	..	0.0	..	16.9	..	27.8
Zimbabwe	37.4	71.7	100.8	..	..	41.2	23.8	83.1	70.4	9.5	..	31.7

Note: Data for 1998 are preliminary and may not cover the entire year.

a. More recent data on short-term debt are available on a website maintained by the Bank for International Settlements, the International Monetary Fund, the Organisation for Economic Co-operation and Development, and the World Bank: http://www.oecd.org/dac/debt.

Source: International Monetary Fund, *International Financial Statistics*; World Bank, Debtor Reporting System.

4.1 Growth of output

	Gross domestic product		Agriculture		Industry		Manufacturing		Services	
	average annual % growth		average annual % growth		average annual % growth		average annual % growth		average annual % growth	
	1980–90	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**
Albania	1.5	1.8	1.9	8.1	2.1	–9.7	..	..	–0.4	4.7
Algeria	2.7	0.8	4.6	2.5	2.3	–2.2	3.3	–10.2	3.6	3.8
Angola	*3.7*	–1.2	*0.5*	–6.9	*6.4*	2.8	*–11.1*	–4.2	*1.7*	–5.7
Argentina	–0.4	5.4	0.7	1.6	–1.3	4.4	–0.8	3.2	0.0	6.4
Armenia	..	–10.3	..	0.2	..	–18.1	..	–13.1	..	–10.8
Australia	3.4	3.6	3.3	*1.1*	2.9	*2.5*	1.9	*2.2*	3.7	*4.4*
Austria	2.2	2.0	1.1	*–0.7*	1.9	*1.3*	2.7	*0.8*	2.5	*2.2*
Azerbaijan	..	–15.1	..	*–4.6*	..	*–8.4*	..	..	..	*–6.6*
Bangladesh	4.3	4.7	2.7	1.2	4.9	7.0	3.1	7.5	5.0	5.1
Belarus	..	–6.1	..	–5.9	..	–7.8	..	–6.5	..	–3.8
Belgium	2.0	1.4	2.0	*1.6*	2.2	*0.7*	2.7	*0.6*	1.8	*1.3*
Benin	2.9	4.5	5.5	5.2	3.0	4.2	*5.2*	..	1.4	4.1
Bolivia	–0.2	4.1	..	..	..	..	..	..	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	10.3	4.5	2.2	–0.8	11.1	2.4	8.8	3.1	10.9	7.2
Brazil	2.7	3.4	2.8	3.3	2.0	3.2	1.6	2.5	3.3	3.3
Bulgaria	3.4	–3.3	–2.1	–3.1	5.2	–5.5	..	..	4.5	–0.6
Burkina Faso	3.6	3.3	3.1	3.6	3.7	2.2	2.0	2.0	4.6	2.8
Burundi	4.4	–3.6	3.1	–3.0	4.5	–8.4	5.7	–9.9	5.6	–3.1
Cambodia	..	5.5	..	2.2	..	10.7	..	8.2	..	7.6
Cameroon	3.4	–0.1	2.1	4.5	5.9	–4.9	5.0	–2.3	2.5	–0.3
Canada	3.3	2.2	*1.2*	*1.2*	*3.1*	*1.8*	*3.7*	*3.0*	*3.6*	*1.8*
Central African Republic	1.4	1.2	1.6	3.2	1.4	0.3	5.0	–0.6	1.0	–1.6
Chad	3.7	4.6	2.3	5.4	8.1	0.0	7.0	..	7.7	–0.5
Chile	4.2	8.3	5.9	5.6	3.5	7.1	3.4	6.3	4.4	9.3
China	10.2	11.6	5.9	4.4	11.1	16.3	10.4	15.5	13.7	9.5
Hong Kong, China	6.9	5.3	..	..	..	..	..	..	..	..
Colombia	3.6	4.4	2.9	1.5	5.0	2.8	3.5	1.5	3.1	6.5
Congo, Dem. Rep.	1.6	–6.0	2.5	3.1	0.9	–11.7	1.6	*–13.4*	1.3	–15.2
Congo, Rep.	3.3	0.7	3.4	0.9	5.2	0.6	6.9	–2.4	2.1	0.7
Costa Rica	3.0	3.8	3.1	2.9	2.8	3.5	3.0	3.4	3.1	4.4
Côte d'Ivoire	0.7	3.0	0.3	2.6	4.4	4.2	3.0	2.4	–0.3	2.8
Croatia	..	*–1.0*	..	*–4.4*	..	*–8.2*	..	*–8.1*	..	*–3.9*
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	*1.7*	–0.2	..	..	..	..	..	..	..	..
Denmark	2.3	2.5	3.1	*1.7*	2.9	*1.9*	1.4	*1.3*	2.6	*1.4*
Dominican Republic	3.1	5.1	0.4	3.7	3.6	5.7	2.9	3.9	3.5	5.2
Ecuador	2.0	3.1	4.4	2.8	1.2	4.1	0.0	3.2	1.7	2.6
Egypt, Arab Rep.	5.4	4.0	2.7	2.9	5.2	4.1	..	4.8	6.6	3.8
El Salvador	0.2	5.6	–1.1	1.2	0.1	5.3	–0.2	5.2	0.7	6.8
Eritrea	..	*5.2*	..	..	..	..	..	..	..	..
Estonia	2.2	–3.8	..	–5.4	..	–8.2	..	*–1.5*	..	–0.4
Ethiopia[a]	*2.3*	4.3	*0.6*	3.0	*3.1*	4.1	*2.7*	4.4	*1.7*	6.9
Finland	3.3	1.4	–0.2	*0.2*	3.3	*2.1*	3.4	*4.9*	4.1	*–0.1*
France	2.3	1.3	2.0	*0.4*	1.1	*0.1*	0.8	*0.5*	3.0	*1.6*
Gabon	0.9	3.2	1.2	–2.3	1.5	2.7	1.8	0.6	0.1	4.6
Gambia, The	3.6	2.2	0.9	0.6	4.7	0.1	7.8	0.5	2.7	3.8
Georgia	0.4	–16.3	..	..	..	..	..	..	..	..
Germany[b]	2.2	*1.4*	1.7	*0.8*	1.2	..	..	*–1.0*	2.9	*2.5*
Ghana	3.0	4.2	1.0	2.7	3.3	4.3	3.9	2.7	5.7	5.7
Greece	1.8	*1.6*	–0.1	*2.0*	1.3	*–0.5*	0.5	*–1.1*	2.7	*1.8*
Guatemala	0.8	4.1	1.2	2.7	–0.2	4.2	0.0	2.8	0.9	4.7
Guinea	..	5.0	..	4.4	..	1.2	..	0.8	..	8.1
Guinea-Bissau	4.0	3.4	4.7	5.5	2.2	2.7	..	4.5	3.9	1.4
Haiti	–0.2	–2.5	–0.1	–4.9	–1.7	–2.7	–1.7	–6.9	0.5	–0.5
Honduras	2.7	3.3	2.7	3.1	3.3	3.8	3.7	3.4	2.5	3.8

Growth of output 4.1

	Gross domestic product		Agriculture		Industry		Manufacturing		Services	
	average annual % growth		average annual % growth		average annual % growth		average annual % growth		average annual % growth	
	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97
Hungary	1.3	–0.2	1.7	–3.8	0.2	1.1	..	*6.5*	2.1	0.3
India	5.8	6.0	3.1	2.7	7.1	7.2	7.4	8.0	6.7	7.8
Indonesia	6.1	7.5	3.4	2.8	6.9	9.9	12.6	10.8	7.0	7.2
Iran, Islamic Rep.	1.7	*4.0*	4.5	*4.8*	3.3	*3.8*	4.5	*4.6*	–1.0	*6.0*
Iraq	–6.8	..	..	..	..	..	..	..	..	..
Ireland	3.2	7.0	..	..	..	..	..	..	..	..
Israel	3.5	5.8	..	..	..	..	..	..	..	..
Italy	2.4	1.1	0.1	*1.3*	2.0	*0.8*	2.9	*1.2*	2.8	*1.1*
Jamaica	2.0	0.4	0.6	4.4	2.4	–0.3	2.7	–1.6	1.8	0.4
Japan	4.0	1.5	1.3	*–1.6*	4.2	*0.7*	4.8	*0.5*	3.9	*2.1*
Jordan	2.5	6.3	6.8	–3.3	1.7	7.9	0.5	6.5	2.0	6.1
Kazakhstan	..	–7.9	..	*–14.4*	..	*–12.7*	..	..	..	*2.9*
Kenya	4.2	2.1	3.3	1.0	3.9	1.9	4.9	2.5	4.9	3.7
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	9.4	7.2	2.8	2.1	12.1	7.5	13.0	7.9	9.0	7.8
Kuwait	*1.3*	..	*14.7*	..	*1.0*	..	*2.3*	..	*2.1*	..
Kyrgyz Republic	..	*–9.5*	..	*–2.7*	..	*–15.6*	..	*–9.2*	..	*–8.7*
Lao PDR	..	6.7	*3.5*	4.5	*6.1*	11.9	*8.9*	12.7	*3.3*	6.7
Latvia	3.5	–8.5	2.3	–10.8	4.3	–15.9	4.4	–15.4	3.2	–0.2
Lebanon	..	8.3	..	..	..	..	..	..	..	..
Lesotho	4.4	7.8	2.2	4.0	7.1	12.1	13.7	*9.4*	4.6	6.9
Libya	*–5.7*	..	..	..	..	..	..	..	..	..
Lithuania	..	–7.1	..	–2.8	..	–12.6	..	..	..	–1.7
Macedonia, FYR	..	*–0.8*	..	1.4	..	–5.6	..	..	..	–1.1
Madagascar	1.1	0.9	2.5	1.6	0.9	1.1	*2.1*	0.6	0.3	1.0
Malawi	2.5	3.6	2.0	8.6	2.9	0.9	3.6	5.1	3.6	–0.2
Malaysia	5.3	8.6	3.8	2.0	7.2	10.8	8.9	13.1	4.2	8.8
Mali	2.8	3.3	3.3	3.4	4.3	7.0	6.8	5.0	1.9	1.9
Mauritania	1.8	4.2	1.7	4.8	4.9	3.7	*–2.1*	1.3	0.4	4.3
Mauritius	6.2	5.0	2.9	0.4	10.3	5.5	11.1	5.5	5.4	6.3
Mexico	0.7	2.2	0.8	1.6	1.1	2.5	1.5	2.9	0.6	2.1
Moldova	3.0	–14.1	..	–7.1	..	–13.0	..	..	..	*–19.9*
Mongolia	*5.4*	–0.6	*1.4*	*7.6*	*6.7*	*–5.1*	..	..	*5.8*	*–2.1*
Morocco	4.2	1.9	6.7	–1.2	3.0	2.9	4.1	2.5	4.2	2.4
Mozambique	–0.1	4.9	*2.1*	6.1	*–8.3*	9.1	..	..	*19.5*	2.2
Myanmar	0.6	6.3	0.5	5.0	0.5	10.1	–0.2	7.0	0.8	6.4
Namibia	0.9	3.8	1.8	4.0	–1.2	3.6	3.7	3.9	1.5	3.7
Nepal	4.6	5.1	4.0	2.2	8.7	8.1	9.3	11.2	3.9	13.2
Netherlands	2.3	2.4	3.4	*3.7*	1.6	*1.2*	2.3	*1.7*	2.6	*2.3*
New Zealand	1.8	3.4	3.8	*2.2*	1.1	*3.7*	0.5	*3.9*	1.9	*3.5*
Nicaragua	–2.0	*4.1*	–5.8	*8.7*	2.1	*–4.8*	–8.6	*–0.8*	–2.8	*2.0*
Niger	–0.1	1.5	1.7	2.2	–1.7	1.2	–2.7	1.5	–0.7	1.0
Nigeria	1.6	2.8	3.3	2.9	–1.1	1.2	0.7	1.8	3.7	3.5
Norway	2.8	4.0	–0.2	*4.5*	3.3	*5.6*	0.2	*2.1*	2.7	*3.1*
Oman	8.4	*5.9*	7.9	..	10.3	..	20.6	..	5.9	..
Pakistan	6.3	4.2	4.3	3.7	7.3	5.2	7.7	5.1	6.8	4.7
Panama	0.5	*4.8*	2.5	*2.2*	–1.3	*7.9*	0.4	*5.1*	0.5	*4.5*
Papua New Guinea	1.9	5.7	1.8	4.1	1.9	8.9	0.1	5.8	2.0	4.3
Paraguay	2.5	3.1	3.6	2.9	–0.3	2.4	2.1	*1.2*	3.3	3.5
Peru	–0.3	6.2	2.7	5.7	–0.9	7.4	–0.3	5.7	–0.7	5.3
Philippines	1.0	3.3	1.0	2.0	–0.9	3.7	0.2	3.1	2.8	3.7
Poland	1.8	4.1	*–0.7*	*–1.6*	*–1.3*	*4.7*	*–1.5*	*3.5*	*2.8*	*3.0*
Portugal	3.1	2.1	..	*–0.4*	..	*0.5*	..	*–0.2*	..	*2.3*
Puerto Rico	4.0	..	1.8	..	3.6	..	1.5	..	4.6	..
Romania	0.5	–0.3	..	0.6	..	–0.1	..	..	..	0.0
Russian Federation	..	–7.7	..	*–7.5*	..	*–9.3*	..	..	..	–5.4

4.1 Growth of output

	Gross domestic product		Agriculture		Industry		Manufacturing		Services	
	average annual % growth		average annual % growth		average annual % growth		average annual % growth		average annual % growth	
	1980–90	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**
Rwanda	2.2	–5.7	0.5	–7.4	2.5	–3.3	2.6	2.2	5.5	–5.4
Saudi Arabia	0.0	1.7	13.4	0.7	–2.3	1.5	7.5	2.7	1.3	2.0
Senegal	3.1	2.5	2.8	1.6	4.3	3.3	4.6	1.8	2.8	2.5
Sierra Leone	0.3	–4.4	3.1	1.6	1.7	–7.8	..	*5.0*	–2.8	–3.5
Singapore	6.6	8.5	–6.2	2.1	5.4	8.8	6.6	7.5	7.5	8.4
Slovak Republic	*2.0*	0.6	*1.6*	–0.4	*2.0*	–6.5	..	..	*0.8*	8.1
Slovenia	..	1.4	..	*0.2*	..	*0.8*	..	*3.0*	..	*3.8*
South Africa	1.2	1.5	2.9	2.5	0.0	0.8	–0.1	1.3	2.4	1.8
Spain	3.0	1.6	..	*–2.5*	..	*–0.4*	..	*–0.7*	..	*–13.1*
Sri Lanka	4.0	5.3	2.2	1.5	4.6	6.5	6.3	*8.8*	4.7	6.3
Sudan	0.4	7.7	–0.6	16.3	2.5	4.7	3.4	1.0	1.7	3.0
Sweden	2.3	0.9	1.5	*–1.9*	2.8	*–0.7*	2.6	*0.8*	2.6	*–0.1*
Switzerland	2.0	0.2	..	..	..	..	..	..	..	..
Syrian Arab Republic	1.5	6.3	–0.6	..	6.6	..	..	..	0.1	..
Tajikistan	..	*–16.4*	..	..	..	..	..	..	..	..
Tanzania[c]	..	2.7	..	3.7	..	*1.2*	..	*1.9*	..	*1.9*
Thailand	7.6	7.4	3.9	3.1	9.8	9.0	9.5	9.3	7.3	7.1
Togo	1.7	1.9	5.6	4.6	1.1	2.2	1.7	1.5	–0.3	–0.5
Trinidad and Tobago	–0.8	1.2	–5.8	–0.3	–5.5	1.2	–10.1	2.4	–2.9	2.9
Tunisia	3.3	4.3	2.8	1.0	3.1	4.4	3.7	5.5	3.5	5.2
Turkey	5.4	4.1	1.3	1.1	7.8	5.0	7.9	5.9	4.4	4.1
Turkmenistan	..	*–9.6*	..	..	..	..	..	..	..	..
Uganda	*2.9*	7.4	*2.1*	3.8	*5.0*	13.0	*3.7*	13.9	*2.8*	8.5
Ukraine	..	–13.1	..	–21.4	..	–16.4	..	–16.0	..	–8.6
United Arab Emirates	*–3.5*	..	9.6	..	–4.2	..	3.1	..	3.6	..
United Kingdom	3.2	2.0	..	..	..	..	..	..	..	..
United States	3.0	3.0	..	*2.0*	..	*4.3*	..	*5.2*	..	*1.9*
Uruguay	0.4	4.0	0.0	4.5	–0.2	0.8	0.4	–0.2	0.8	5.4
Uzbekistan	..	–2.4	..	–1.5	..	*–6.1*	..	*–5.6*	..	*–2.2*
Venezuela	1.1	2.2	3.0	1.2	1.6	3.8	4.3	1.8	0.5	0.7
Vietnam	*4.6*	8.6	*4.3*	5.1	..	13.3	..	..	..	8.8
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	3.7	..	4.8	..	6.4	..	1.0	..	0.4
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	1.0	1.0	3.6	–5.0	0.8	–5.2	4.1	–16.7	–0.4	9.6
Zimbabwe	3.6	1.8	3.1	3.2	3.2	–1.5	2.8	–2.0	3.1	3.2
World	**3.2 w**	**2.4 w**	**2.7 w**	***1.1* w**	**.. w**	***2.6* w**	**.. w**	***2.7* w**	**.. w**	***2.1* w**
Low income	4.4	3.9	3.0	2.6	4.9	4.6	6.0	5.9	5.1	5.4
Middle income	2.9	2.8	3.5	1.1	2.8	3.8	3.7	6.7	3.1	3.3
Lower middle income	4.9	2.3	4.2	0.7	6.0	4.4	7.1	9.9	5.6	3.0
Upper middle income	1.8	3.4	2.4	1.9	1.1	3.4	1.7	3.4	2.0	3.6
Low & middle income	3.1	3.0	3.4	1.4	3.0	3.9	3.9	6.6	3.3	3.5
East Asia & Pacific	7.5	9.4	4.7	3.8	8.4	13.2	9.3	13.2	8.7	8.0
Europe & Central Asia	..	–4.3	..	–6.3	..	–5.5	..	..	..	*–1.4*
Latin America & Carib.	1.6	3.8	2.1	2.7	1.2	3.6	1.2	2.8	1.6	3.9
Middle East & N. Africa	2.1	*2.9*	5.5	*1.7*	0.6	*2.3*	..	*2.8*	2.1	*3.6*
South Asia	5.6	5.6	3.2	2.7	6.8	6.9	7.0	7.6	6.4	7.0
Sub-Saharan Africa	1.8	2.0	2.4	2.5	0.9	1.0	0.8	1.1	2.4	2.0
High income	3.2	2.2	..	0.6	..	*2.3*	..	*2.0*	..	*1.9*
Europe EMU	..	*1.6*	..	*0.7*	..	..	..	*0.3*	..	*0.8*

a. Data prior to 1992 include Eritrea. b. Data prior to 1990 refer to the Federal Republic of Germany before unification. c. Data cover mainland Tanzania only.

Growth of output 4.1

About the data

Growth rates are calculated using constant price data in the local currency. Regional and income group growth rates are calculated after converting local currencies to U.S. dollars using the average official exchange rate reported by the International Monetary Fund for the year shown or, occasionally, an alternative conversion factor determined by the World Bank's Development Data Group. The growth rates in the table are annual average compound growth rates. Methods of computing growth rates and the alternative conversion factor are described in *Statistical methods.*

Measuring growth

An economy's growth is measured by the increase in value added produced by the individuals and enterprises operating in that economy. Thus measuring real growth requires estimates of GDP and its components valued in constant prices. In principle, real value added can be estimated by measuring the quantity of goods produced in a period, valuing them at an agreed set of base year prices, and subtracting the cost of inputs, also in constant prices. This double deflation method, recommended by the United Nations (UN) System of National Accounts, requires detailed information on the structure of prices of inputs and outputs. In many industries, however, value added is extrapolated from the base year using single volume indexes of outputs or, more rarely, inputs. In others, particularly services, real output is imputed from labor inputs, such as real wages or the number of employees. The real output of governments and other unpriced services are calculated in the same way. In the absence of well-defined measures of output, measuring the real growth of services remains difficult.

Technical progress can lead to improvements in production and in the quality of goods. If not properly accounted for, either effect can distort measures of value added and thus of growth. When inputs are used to estimate output, as in services, unmeasured technical progress leads to underestimates of the quantity and real value of output. Unmeasured changes in the quality of goods produced also lead to underestimates of real value. The result can be underestimates of real growth and productivity change and overestimates of inflation.

Informal activities pose a particular problem, especially in developing countries, where much economic activity may go unrecorded. Obtaining a complete picture of the economy requires estimating household outputs produced for local sale and for home use, barter exchanges, and illicit or deliberately unreported activity. How consistent and complete such estimates will be depends on the skill of the compiling statisticians and the resources available to them.

Rebasing national accounts

Countries occasionally rebase their national accounts by collecting a complete set of observations on the value and volume of production in a new base year. Using these data, they update price indexes to reflect the relative importance of inputs and outputs in total output, and generate volume indexes to reflect relative price levels. The new base year should represent normal operation of the economy—that is, a year without major shocks or distortions. But the choice of base year and the timing of economic surveys are also determined by administrative convenience, resource availability, and international agreement. Some developing countries have not rebased their national accounts for many years. Using an old base year can be misleading because implicit price and volume weights become progressively less relevant and useful.

The World Bank collects constant price national accounts series in national currencies and the country's original base year. To obtain comparable series of constant price data, it rescales GDP (and value added) by industrial origin (agriculture, industry, and services) to a common reference year, currently 1995. This process gives rise to a discrepancy between the rescaled GDP and the sum of the rescaled components. Because allocating the discrepancy would give rise to distortions in the growth rate, the discrepancy is left unallocated.

Changes in the System of National Accounts

Most countries use the definitions of the UN System of National Accounts (SNA), series F, no. 2, version 3, referred to as the 1968 SNA. Version 4 of the SNA was completed in 1993. Until new economic surveys can be implemented, most countries will continue to follow the 1968 SNA. A few low-income countries still use concepts from older SNA guidelines, including valuations such as factor cost, in describing major economic aggregates.

Definitions

• **Gross domestic product** at purchasers' prices is the sum of the gross value added by all resident and nonresident producers in the economy plus any taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. The industrial origin of value added is determined by the International Standard Industrial Classification (ISIC) revision 2. • **Agriculture** corresponds to ISIC divisions 1–5 and includes forestry and fishing. • **Industry** comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas. • **Manufacturing** refers to industries belonging to divisions 15–37. • **Services** correspond to ISIC divisions 50–99.

Data sources

NATIONAL ACCOUNTS STATISTICS: MAIN AGGREGATES AND DETAILED TABLES, 1994
PART I

National accounts data for developing countries are collected from national statistical organizations and central banks by visiting and resident World Bank missions. Data for industrial countries come from Organisation for Economic Co-operation and Development (OECD) data files. The World Bank rescales constant price data to a common reference year. The complete national accounts time series is available on the *World Development Indicators 1999* CD-ROM. For information on the OECD national accounts series see the OECD's *Main Economic Indicators* (monthly). The United Nations publishes detailed national accounts for member countries in *National Accounts Statistics: Main Aggregates and Detailed Tables;* updates are published in the *Monthly Bulletin of Statistics.*

4.2 Structure of output

	Gross domestic product		Agriculture value added		Industry value added		Manufacturing value added		Services value added	
	$ millions		% of GDP		% of GDP		% of GDP		% of GDP	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Albania	..	2,460	34	63	45	18	..	..	21	19
Algeria	42,345	47,072	10	11	54	49	9	9	36	39
Angola	..	7,662	..	9	..	62	..	4	..	29
Argentina	76,962	325,012	6	7	41	33	29	22	52	61
Armenia	..	1,628	..	41	..	36	..	25	..	23
Australia	160,109	393,519	5	*3*	36	*26*	19	*14*	58	*71*
Austria	78,539	206,232	4	*1*	36	*30*	25	*20*	60	*68*
Azerbaijan	..	4,399	..	22	..	18	..	*18*	..	60
Bangladesh	17,430	41,419	34	24	24	27	18	17	42	49
Belarus	..	22,629	..	14	..	44	..	37	..	42
Belgium	119,938	242,523	2	*1*	34	27	21	*18*	64	*72*
Benin	1,405	2,141	35	38	12	14	8	8	52	48
Bolivia	2,750	7,977	..	16	..	33	..	19	..	51
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	1,035	5,070	11	3	45	48	4	5	43	49
Brazil	234,873	820,381	11	8	44	35	33	23	45	57
Bulgaria	20,040	10,085	14	23	54	26	..	18	32	50
Burkina Faso	1,709	2,395	33	35	22	27	16	20	45	38
Burundi	920	957	62	53	13	17	7	10	25	30
Cambodia	..	3,044	..	51	..	15	..	6	..	34
Cameroon	6,741	9,115	29	41	23	21	9	10	48	38
Canada	266,003	607,744	4	..	38	..	19	..	58	..
Central African Republic	797	1,019	40	54	20	18	7	9	40	28
Chad	1,033	1,603	45	39	9	15	..	12	46	46
Chile	27,572	77,082	7	7	37	31	21	15	55	61
China	201,687	901,981	30	19	49	49	41	37	21	32
Hong Kong, China	28,495	171,401	1	*0*	32	*15*	24	*7*	67	*84*
Colombia	33,385	95,745	19	11	32	20	23	17	49	69
Congo, Dem. Rep.	14,922	6,101	25	58	33	17	14	..	42	25
Congo, Rep.	1,706	2,298	12	10	47	57	7	6	42	33
Costa Rica	4,815	9,521	18	15	27	23	19	17	55	62
Côte d'Ivoire	10,175	10,251	26	27	20	21	13	18	54	51
Croatia	..	*19,081*	..	*12*	..	*25*	..	*20*	..	*62*
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	29,042	52,035	7	..	63	..	..	..	30	..
Denmark	67,791	170,037	5	*4*	29	*27*	20	*19*	66	*69*
Dominican Republic	6,631	15,039	20	12	28	32	15	17	52	55
Ecuador	11,733	19,768	12	12	38	35	18	21	50	53
Egypt, Arab Rep.	22,912	75,605	18	18	37	32	12	25	45	51
El Salvador	3,574	11,264	38	13	22	28	16	21	40	60
Eritrea	..	655	..	9	..	30	..	16	..	61
Estonia	..	4,682	..	7	..	28	..	17	..	65
Ethiopia[a]	*5,179*	6,381	*56*	55	*12*	7	*8*	0	*32*	38
Finland	51,306	119,834	10	*4*	40	*34*	28	*25*	51	*62*
France	664,595	1,392,501	4	*2*	34	*26*	24	*19*	62	*72*
Gabon	4,279	5,153	7	7	60	55	5	5	33	37
Gambia, The	241	407	31	30	15	15	6	6	54	55
Georgia	..	5,244	24	32	36	23	28	18	40	45
Germany	..	2,092,320	..	*1*	..	..	..	*24*	..	*44*
Ghana	4,445	6,884	58	36	12	26	8	9	30	39
Greece	48,613	*122,946*	14	*11*	25	*18*	16	*10*	61	*71*
Guatemala	7,879	17,772	25	24	22	20	17	14	53	56
Guinea	..	3,888	..	23	..	35	..	4	..	42
Guinea-Bissau	111	266	42	54	19	11	..	7	39	35
Haiti	1,462	2,815	..	30	..	20	..	..	..	50
Honduras	2,566	4,491	24	20	24	28	15	16	52	52

Structure of output 4.2

	Gross domestic product		Agriculture value added		Industry value added		Manufacturing value added		Services value added	
	$ millions		% of GDP		% of GDP		% of GDP		% of GDP	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	22,186	45,725	19	6	47	34	..	25	34	60
India	172,370	381,566	38	25	26	30	18	19	36	45
Indonesia	78,013	214,995	24	16	42	43	13	26	34	41
Iran, Islamic Rep.	92,664	*89,979*	18	*25*	32	*34*	9	*14*	50	*40*
Iraq	47,562	..	..	..	..	..	..	..	..	..
Ireland	20,080	75,030	..	6	..	..	..	..	..	62
Israel	21,885	98,081	..	..	..	..	..	..	..	..
Italy	449,913	1,145,560	6	*3*	39	*31*	28	*20*	55	*66*
Jamaica	2,652	4,135	8	8	38	35	17	16	54	57
Japan	1,059,254	4,190,233	4	*2*	42	*38*	29	*24*	54	*60*
Jordan	3,962	7,015	8	3	28	25	13	13	64	71
Kazakhstan	..	22,165	..	12	..	27	..	..	..	61
Kenya	7,265	10,240	33	29	21	16	13	10	47	56
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	62,803	442,543	15	6	40	43	28	26	45	51
Kuwait	28,639	30,373	0	*0*	75	*54*	6	*11*	25	*46*
Kyrgyz Republic	..	1,764	..	45	..	23	..	18	..	33
Lao PDR	..	1,753	..	52	..	21	..	16	..	26
Latvia	..	5,527	12	7	51	31	46	21	37	62
Lebanon	..	14,962	..	12	..	27	..	17	..	61
Lesotho	369	950	24	11	29	42	7	17	47	47
Libya	35,545	..	2	..	76	..	2	..	22	..
Lithuania	..	9,585	..	13	..	32	..	21	..	55
Macedonia, FYR	..	2,201	..	12	..	27	..	..	..	61
Madagascar	4,042	3,546	30	32	16	14	..	11	54	55
Malawi	1,238	2,519	44	36	23	18	14	14	34	46
Malaysia	24,488	98,473	22	12	38	47	21	*34*	40	41
Mali	1,686	2,532	48	49	13	17	7	7	38	34
Mauritania	709	1,097	30	25	26	29	..	10	44	46
Mauritius	1,132	4,398	12	9	26	33	15	25	62	58
Mexico	223,505	402,963	8	5	33	26	22	20	59	69
Moldova	..	1,872	..	31	..	35	..	28	..	34
Mongolia	..	862	*15*	37	*33*	23	..	..	*52*	40
Morocco	18,821	33,514	18	15	31	33	17	18	51	51
Mozambique	2,857	2,753	37	31	35	24	..	10	27	45
Myanmar	..	..	47	59	13	10	10	7	41	31
Namibia	2,262	3,280	11	11	55	33	9	14	34	56
Nepal	1,946	4,929	62	41	12	22	4	9	26	36
Netherlands	171,861	360,278	3	*3*	32	*27*	18	*18*	64	*70*
New Zealand	22,395	64,572	11	..	31	..	22	..	58	..
Nicaragua	2,144	*1,971*	23	*34*	31	*22*	26	*16*	45	*44*
Niger	2,508	1,855	43	38	23	18	4	7	34	44
Nigeria	64,202	39,856	21	33	46	47	8	5	34	20
Norway	63,419	153,363	4	*2*	35	*32*	15	*11*	61	*66*
Oman	5,982	*12,102*	3	..	69	..	1	..	28	..
Pakistan	23,690	61,667	30	25	25	25	16	17	46	50
Panama	3,810	*8,244*	10	*8*	21	*18*	12	*9*	69	*73*
Papua New Guinea	2,548	4,639	33	28	27	36	10	9	40	36
Paraguay	4,579	10,180	29	23	27	22	16	14	44	55
Peru	20,651	63,849	10	7	42	36	20	23	48	57
Philippines	32,500	82,157	25	19	39	32	26	22	36	49
Poland	57,068	135,659	..	*6*	..	*39*	..	..	..	*55*
Portugal	28,729	102,133	..	*4*	..	*32*	..	*22*	..	*64*
Puerto Rico	14,436	*42,364*	3	..	39	..	37	..	58	..
Romania	..	34,843	..	20	..	45	..	..	..	36
Russian Federation	..	446,982	..	8	..	37	..	..	..	55

4.2 Structure of output

	Gross domestic product $ millions		Agriculture value added % of GDP		Industry value added % of GDP		Manufacturing value added % of GDP		Services value added % of GDP	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	1,163	1,863	50	37	23	26	17	19	27	36
Saudi Arabia	156,487	140,374	1	6	81	45	5	10	18	49
Senegal	2,986	4,542	19	18	15	22	11	15	66	59
Sierra Leone	1,199	823	33	50	21	21	5	7	47	29
Singapore	11,718	96,319	1	0	38	35	29	24	61	65
Slovak Republic	..	19,461	..	5	..	33	..	..	..	62
Slovenia	..	18,201	..	5	..	39	..	29	..	57
South Africa	78,744	129,094	7	5	50	39	23	24	43	57
Spain	213,308	532,034	..	*3*	..	..	..	*18*	..	*25*
Sri Lanka	4,032	15,093	28	22	30	26	18	17	43	52
Sudan	7,617	10,224	33	..	14	..	7	..	53	..
Sweden	125,557	227,639	4	..	34	..	23	..	63	..
Switzerland	107,474	255,265	..	..	..	..	..	..	..	..
Syrian Arab Republic	13,062	17,899	20	..	23	..	..	..	56	..
Tajikistan	..	*1,990*	..	..	..	..	..	..	..	..
Tanzania[b]	..	6,920	..	47	..	21	..	7	..	31
Thailand	32,354	153,909	23	11	29	40	22	29	48	49
Togo	1,136	1,475	27	42	25	21	8	9	48	37
Trinidad and Tobago	6,236	5,892	2	2	60	46	9	9	38	52
Tunisia	8,742	18,937	14	13	31	29	12	19	55	58
Turkey	68,824	189,878	26	15	22	28	14	18	51	57
Turkmenistan	..	4,397	..	..	..	..	..	..	..	..
Uganda	1,244	6,582	72	44	4	17	4	8	23	39
Ukraine	..	49,677	..	12	..	40	..	6	..	48
United Arab Emirates	29,625	*39,107*	1	..	77	..	4	..	22	..
United Kingdom	537,383	1,286,488	2	*2*	43	*31*	27	*21*	55	*67*
United States	2,709,000	7,834,036	3	*2*	33	*27*	22	*18*	64	*71*
Uruguay	10,132	19,971	14	8	34	27	26	18	53	64
Uzbekistan	..	25,047	..	31	..	27	..	9	..	42
Venezuela	69,369	87,480	5	4	46	41	16	16	49	55
Vietnam	..	24,848	..	26	..	31	..	..	..	43
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	5,656	..	18	..	49	..	11	..	34
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	3,884	3,865	14	16	41	31	18	12	44	52
Zimbabwe	6,679	8,906	16	19	29	25	22	18	55	56
World	10,925,235 t	28,976,806 t	7 w	*4* w	38 w	*32* w	25 w	*21* w	56 w	*61* w
Low income	529,916	752,857	36	28	25	28	16	17	39	43
Middle income	2,530,074	5,408,717	16	11	42	37	27	24	41	52
Lower middle income	1,289,992	2,705,721	25	15	41	41	28	29	34	44
Upper middle income	1,179,965	2,708,856	10	8	43	34	26	21	47	58
Low & middle income	3,063,059	6,160,626	18	13	40	36	25	23	41	51
East Asia & Pacific	444,404	1,528,013	28	18	43	45	31	33	29	37
Europe & Central Asia	..	1,139,383	..	12	..	34	..	..	..	54
Latin America & Carib.	782,093	2,088,919	10	8	40	32	28	21	50	60
Middle East & N. Africa	391,073	*498,583*	10	*14*	53	*38*	9	*14*	37	*48*
South Asia	223,083	512,453	37	25	26	29	17	19	38	46
Sub-Saharan Africa	269,559	326,714	18	18	39	34	16	17	43	48
High income	7,990,861	22,848,467	4	*2*	37	*31*	25	*21*	59	*63*
Europe EMU	..	6,283,899	..	*2*	..	..	..	*21*	..	*58*

a. Data prior to 1992 include Eritrea. b. Data cover mainland Tanzania only.

Structure of output 4.2

About the data

Output by industrial origin is measured by the value of gross output of producers less the value of intermediate goods and services consumed in production. This concept is known as value added. A country's gross domestic product represents the sum of value added by all producers in that country. Since 1968 the United Nations System of National Accounts (SNA) has called for estimates of value added by industrial origin to be valued at either basic prices (excluding net taxes on products) or producer prices (including net taxes on products paid by the producers, but excluding sales or value added taxes). Some countries, however, report such data at market prices—the prices at which final sales are made—which may affect estimates of the distribution of output. Total GDP as shown in the table and elsewhere in this book is measured at market prices. Value added by industry is normally measured at basic prices. When value added is valued at purchasers' prices, this is noted in *Primary data documentation*.

While GDP by industrial origin is generally more reliable than estimates compiled from income or expenditure accounts, different countries use different definitions, methods, and reporting standards. World Bank staff review the quality of national accounts data and sometimes make adjustments to increase consistency with international guidelines. Nevertheless, significant discrepancies remain between international standards and actual practice. Many statistical offices, especially those in developing countries, face severe limits on the resources, time, training, and budgets required to produce reliable and comprehensive series of national accounts.

Data problems in measuring output

Among the difficulties faced by compilers of national accounts is the extent of unreported economic activity in the informal or secondary economy. In developing countries a large share of agricultural output is either not exchanged (because it is consumed within the household) or not exchanged for money.

Agricultural production often must be estimated indirectly, using a combination of methods involving estimates of inputs, yields, and area under cultivation. This approach sometimes leads to crude approximations that can differ over time and across crops for reasons other than climatic conditions or farming techniques. Similarly, agricultural inputs, which cannot easily be allocated to specific outputs, are frequently "netted out" using equally crude and ad hoc approximations. For further discussion of the measurement of agricultural production see *About the data* for table 3.3.

Industrial output ideally should be measured through regular censuses and surveys of firms. But in most developing countries such surveys are infrequent and quickly go out of date, so many results must be extrapolated. The choice of sampling unit, which may be the enterprise (where responses may be based on financial records) or the establishment (where production units may be recorded separately), also affects the quality of the data. Moreover, much industrial production is organized not in firms but in unincorporated or owner-operated ventures that are not captured by surveys aimed at the formal sector. Even in large industries, where regular surveys are more likely, evasion of excise and other taxes lowers the estimates of value added. Such problems become more acute as countries move from state control of industry to private enterprise, because new firms enter business and growing numbers of established firms fail to report. In accordance with the SNA, output should include all such unreported activity as well as the value of illegal activities and other unrecorded, informal, or small-scale operations. Data on these activities need to be collected using techniques other than conventional surveys.

In industries dominated by large organizations and enterprises, such as public utilities, data on output, employment, and wages are usually readily available and reasonably reliable. But in the service industry the many self-employed workers and one-person businesses are sometimes difficult to locate, and their owners have little incentive to respond to surveys, let alone report their full earnings. Compounding these problems are the many forms of economic activity that go unrecorded, including the work that women and children do for little or no pay. For further discussion of the problems of using national accounts data see Srinivasan (1994) and Heston (1994).

Dollar conversion

To produce national accounts aggregates that are internationally comparable, the value of output must be converted to a common currency. The World Bank conventionally uses the U.S. dollar and applies the average official exchange rate reported by the International Monetary Fund for the year shown. An alternative conversion factor is applied if the official exchange rate is judged to diverge by an exceptionally large margin from the rate effectively applied to domestic transactions in foreign currencies and traded products. Shares of output by industrial origin are calculated from data in local currencies and current prices.

Definitions

• **Gross domestic product** at purchasers' prices is the sum of the gross value added by all resident and nonresident producers in the economy plus indirect taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. • **Value added** is the net output of a sector after adding up all outputs and subtracting intermediate inputs. The industrial origin of value added is determined by the International Standard Industrial Classification (ISIC) revision 2. • **Agriculture** corresponds to ISIC divisions 1–5 and includes forestry and fishing. • **Industry** comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas. • **Manufacturing** refers to industries belonging to divisions 15–37. • **Services** correspond to ISIC divisions 50–99.

Data sources

NATIONAL ACCOUNTS STATISTICS: MAIN AGGREGATES AND DETAILED TABLES, 1994
PART I
UNITED NATIONS

The national accounts indicators for developing countries are collected from national statistical organizations and central banks by visiting and resident World Bank missions. Data for industrial countries come from Organisation for Economic Co-operation and Development (OECD) data files (see the OECD's *Main Economic Indicators*). The complete national accounts time series is available on the *World Development Indicators 1999* CD-ROM. The United Nations also publishes detailed national accounts for member countries in *National Accounts Statistics: Main Aggregates and Detailed Tables;* updates are published in the *Monthly Bulletin of Statistics*.

4.3 Structure of manufacturing

	Value added in manufacturing		Food, beverages, and tobacco		Textiles and clothing		Machinery and transport equipment		Chemicals		Other manufacturing	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Albania	..	..	..	..	..	..	..	..	..	..	..	..
Algeria	3,257	3,478	27	*13*	18	*14*	10	*15*	3	*5*	43	*54*
Angola	..	257	..	..	..	..	..	..	..	..	..	..
Argentina	22,685	66,686	19	..	13	..	19	..	9	..	41	..
Armenia	..	367	..	..	..	..	..	..	..	..	..	..
Australia	30,722	56,576	17	..	7	..	21	..	7	..	46	..
Austria	19,263	45,387	16	19	10	16	25	16	7	8	42	42
Azerbaijan	..	652	..	..	..	..	..	..	..	..	..	..
Bangladesh	3,101	6,783	24	..	43	..	4	..	16	..	14	..
Belarus	..	6,111	..	..	..	..	..	..	..	..	..	..
Belgium	25,773	48,881	17	*18*	8	*7*	24	..	11	*15*	40	*53*
Benin	112	183	59	..	14	..	..	..	6	..	21	..
Bolivia	..	1,408	28	*34*	11	*5*	4	*1*	3	*3*	54	*57*
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	43	234	..	*46*	..	*16*	..	..	..	..	..	*38*
Brazil	70,984	150,057	14	..	11	..	25	..	11	..	40	..
Bulgaria	..	1,944	..	*19*	..	*10*	..	*12*	..	..	..	*58*
Burkina Faso	261	455	59	..	19	..	3	..	1	..	17	..
Burundi	63	75	..	..	..	..	..	..	..	..	..	..
Cambodia	..	168	..	..	..	..	..	..	..	..	..	..
Cameroon	593	903	56	*31*	9	*8*	4	*1*	3	*3*	29	*56*
Canada	46,128	..	14	14	7	5	23	30	8	9	48	42
Central African Republic	54	104	49	..	22	..	8	..	11	..	10	..
Chad	..	181	..	..	..	..	..	..	..	..	..	..
Chile	5,911	10,736	27	28	9	6	6	4	8	12	51	49
China	81,836	308,941	10	*14*	18	*14*	22	*25*	11	*10*	38	*38*
Hong Kong, China	6,392	10,352	5	..	42	..	18	..	2	..	34	..
Colombia	7,769	14,796	..	32	..	12	..	7	..	16	..	33
Congo, Dem. Rep.	2,144	..	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	128	164	*35*	..	*16*	..	*5*	..	..	..	*44*	..
Costa Rica	895	1,664	46	*46*	10	*7*	8	*9*	7	*12*	28	*26*
Côte d'Ivoire	1,304	1,866	35	..	15	..	10	..	..	..	40	..
Croatia	..	*2,847*	..	..	..	..	..	..	..	..	..	..
Cuba	..	..	55	..	7	..	1	..	..	..	37	..
Czech Republic	..	..	..	..	..	..	..	..	..	..	..	..
Denmark	11,411	*29,628*	24	..	5	..	25	..	10	..	37	..
Dominican Republic	1,015	2,265	66	..	6	..	1	..	6	..	21	..
Ecuador	2,072	4,123	..	..	..	..	..	..	..	..	..	..
Egypt, Arab Rep.	2,678	15,354	19	..	30	..	11	..	9	..	31	..
El Salvador	589	2,156	37	47	22	37	4	1	11	5	27	10
Eritrea	..	85	..	..	..	..	..	..	..	..	..	..
Estonia	..	649	..	..	..	..	..	..	..	..	..	..
Ethiopia	*381* [a]	..	..	..	..	..	..	..	..	..	..	..
Finland	13,019	28,129	..	*11*	..	*3*	..	*26*	..	*8*	..	*53*
France	160,811	290,184	13	13	8	12	30	*30*	8	52	41	*42*
Gabon	195	262	24	..	4	..	9	..	4	..	58	..
Gambia, The	12	22	35	..	2	..	..	..	3	..	60	..
Georgia	..	838	..	..	..	..	..	..	..	..	..	..
Germany	..	556,177	..	..	..	..	..	..	..	..	..	..
Ghana	347	598	37	43	11	5	2	2	5	7	46	43
Greece	6,968	*10,719*	18	*28*	23	*14*	14	*12*	8	*11*	37	*35*
Guatemala	1,312	2,190	39	..	10	..	5	..	17	..	28	..
Guinea	..	188	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	19	..	..	..	..	..	..	..	..	..	..
Haiti	..	*156*	..	..	..	..	..	..	..	..	..	..
Honduras	344	637	*51*	64	*9*	7	*2*	0	*5*	7	*34*	49

Structure of manufacturing 4.3

	Value added in manufacturing		Food, beverages, and tobacco		Textiles and clothing		Machinery and transport equipment		Chemicals		Other manufacturing	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Hungary	..	8,918	11	*21*	11	*7*	28	*23*	11	*8*	38	*40*
India	27,376	62,704	9	..	21	..	25	..	14	..	30	..
Indonesia	10,133	58,244	32	*23*	14	*19*	13	*15*	11	*9*	30	*34*
Iran, Islamic Rep.	8,567	*12,641*	..	29	..	35	..	12	..	3	..	21
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	..	29	*25*	8	*2*	17	*34*	14	*20*	32	*18*
Israel	..	..	12	20	12	15	26	16	8	6	42	42
Italy	126,012	244,901	9	..	12	..	29	..	11	..	39	..
Jamaica	441	681	47	..	6	..	..	..	..	..	37	..
Japan	309,747	1,117,435	9	*9*	7	*4*	33	*39*	9	*11*	43	*37*
Jordan	447	754	23	30	7	17	1	4	7	2	62	48
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kenya	796	799	34	*44*	12	*9*	15	*10*	9	*9*	30	*29*
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	17,686	125,314	17	8	19	9	17	41	10	8	36	35
Kuwait	1,581	*2,913*	7	*7*	5	*7*	4	*7*	7	*3*	76	*76*
Kyrgyz Republic	..	202	..	..	..	..	..	..	..	..	..	..
Lao PDR	..	287	..	..	..	..	..	..	..	..	..	..
Latvia	..	937	..	*39*	..	*11*	..	*20*	..	*5*	..	*26*
Lebanon	..	2,018	..	..	..	..	..	..	..	..	..	..
Lesotho	21	121	73	..	7	..	..	..	4	..	16	..
Libya	682	..	31	..	10	..	..	..	16	..	43	..
Lithuania	..	1,581	..	..	..	..	..	..	..	..	..	..
Macedonia, FYR	..	..	..	*24*	..	*22*	..	*16*	..	*10*	..	*29*
Madagascar	..	428	*34*	..	*45*	..	*3*	..	*6*	..	*13*	..
Malawi	152	292	58	..	12	..	4	..	5	..	20	..
Malaysia	5,054	34,030	24	*8*	7	*5*	20	*40*	5	*9*	43	*38*
Mali	106	180	29	..	51	..	8	..	..	..	11	..
Mauritania	..	117	..	..	..	..	..	..	..	..	..	..
Mauritius	147	915	36	..	30	..	6	..	6	..	23	..
Mexico	49,445	65,088	..	*29*	..	*3*	..	*22*	..	*17*	..	*28*
Moldova	..	387	..	..	..	..	..	..	..	..	..	..
Mongolia	..	..	..	*25*	..	*35*	..	..	..	*1*	..	*12*
Morocco	3,167	6,252	..	*25*	..	*19*	..	*8*	..	*15*	..	*22*
Mozambique	..	167	..	..	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	..	..	..	..
Namibia	187	361	..	..	..	..	..	..	..	..	..	..
Nepal	78	407	..	..	..	..	..	..	..	..	..	..
Netherlands	30,866	*70,407*	*23*	24	*4*	3	*27*	25	*14*	14	*32*	35
New Zealand	4,950	*9,504*	26	22	11	14	17	19	6	5	40	49
Nicaragua	552	316	53	49	8	14	1	..	10	9	28	20
Niger	94	129	30	..	25	..	2	..	16	..	28	..
Nigeria	5,195	1,657	*21*	..	*13*	..	*13*	..	*13*	..	*39*	..
Norway	9,196	17,602	15	*23*	4	*2*	27	*26*	7	*8*	48	*41*
Oman	39	..	..	..	..	..	..	..	..	..	..	..
Pakistan	3,389	9,859	32	22	22	38	9	5	12	11	25	23
Panama	408	704	49	45	10	7	2	2	6	4	28	42
Papua New Guinea	242	457	40	..	1	..	16	..	3	..	41	..
Paraguay	733	*1,230*	..	..	..	..	..	..	..	..	..	..
Peru	4,173	14,158	25	..	13	..	13	..	10	..	40	..
Philippines	8,354	18,908	30	38	13	9	12	9	14	11	31	32
Poland	..	..	12	..	17	..	32	..	8	..	31	..
Portugal	..	*23,536*	13	15	22	20	16	15	7	5	42	46
Puerto Rico	5,306	..	..	*17*	..	*5*	..	*13*	..	*52*	..	*14*
Romania	..	..	..	..	..	..	..	..	..	..	..	..
Russian Federation	..	..	..	*17*	..	*5*	..	*25*	..	*9*	..	*40*

4.3 Structure of manufacturing

	Value added in manufacturing		Food, beverages, and tobacco		Textiles and clothing		Machinery and transport equipment		Chemicals		Other manufacturing	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Rwanda	178	226	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	7,740	12,737	..	..	..	..	..	..	..	..	..	..
Senegal	316	713	50	*48*	19	*5*	4	*3*	8	*23*	20	*21*
Sierra Leone	54	53	*51*	..	*5*	..	..	..	..	..	*44*	..
Singapore	3,415	23,520	5	*4*	5	*1*	44	*59*	5	*8*	41	*28*
Slovak Republic	..	..	..	*13*	..	*10*	..	*20*	..	*10*	..	*47*
Slovenia	..	4,553	..	*15*	..	*11*	..	*18*	..	*13*	..	*43*
South Africa	16,607	26,729	12	*15*	9	*8*	21	*20*	9	*9*	48	*48*
Spain	..	103,623	16	*18*	12	*7*	23	*27*	9	*11*	41	*38*
Sri Lanka	670	2,015	..	..	..	..	..	..	..	..	..	..
Sudan	518	..	..	..	..	..	..	..	..	..	..	..
Sweden	26,293	*38,821*	10	*9*	3	*1*	33	*34*	*7*	*11*	47	*44*
Switzerland	..	..	..	*10*	..	*4*	..	*29*	..	..	..	*57*
Syrian Arab Republic	..	..	..	..	..	..	..	..	..	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania[b]	..	392	23	..	33	..	8	..	6	..	30	..
Thailand	6,960	51,525	*55*	55	*8*	5	*9*	8	*7*	8	*21*	24
Togo	89	135	47	44	13	36	..	..	8	..	32	..
Trinidad and Tobago	557	463	22	..	4	..	9	..	4	..	61	..
Tunisia	1,030	3,593	18	35	19	12	7	..	15	20	42	26
Turkey	9,337	29,415	18	13	15	17	14	19	10	12	42	39
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	53	432	..	..	..	..	..	..	..	..	..	..
Ukraine	..	2,632	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	1,130	..	*12*	..	*2*	..	*2*	..	*7*	..	*77*	..
United Kingdom	125,830	213,752	13	*14*	6	*5*	33	*31*	10	*13*	38	*37*
United States	589,100	1,343,500	11	*12*	6	*5*	34	*33*	10	*12*	40	*38*
Uruguay	2,627	3,521	28	43	17	13	10	6	7	9	38	29
Uzbekistan	..	*1,720*	..	..	..	..	..	..	..	..	..	..
Venezuela	11,111	12,459	19	..	7	..	9	..	8	..	57	..
Vietnam	..	..	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	546	..	..	..	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	718	387	44	44	13	8	9	6	9	4	25	65
Zimbabwe	1,384	1,340	23	*38*	17	*13*	8	*11*	9	*3*	42	*36*
World	2,415,281 w	5,976,465 w										
Low income	64,515	107,331										
Middle income	419,041	1,193,688										
Lower middle income	214,829	708,160										
Upper middle income	..	486,771										
Low & middle income	488,395	1,300,894										
East Asia & Pacific	120,724	484,195										
Europe & Central Asia	..	..										
Latin America & Carib.	..	377,773										
Middle East & N. Africa	..	*62,650*										
South Asia	35,172	83,115										
Sub-Saharan Africa	33,031	43,094										
High income	1,913,783	4,688,394										
Europe EMU	..	*1,415,000*										

Note: Shares may not add to 100 percent due to rounding and unallocated data.
a. Includes Eritrea. b. Data cover mainland Tanzania only.

Structure of manufacturing 4.3

About the data

Data on the distribution of manufacturing value added by industry are provided by the United Nations Industrial Development Organization (UNIDO). UNIDO obtains data on manufacturing value added from a variety of national and international sources, including the United Nations Statistical Division, the World Bank, the Organisation for Economic Co-operation and Development, and the International Monetary Fund. To improve comparability over time and across countries, UNIDO supplements these data with information from industrial censuses, statistics supplied by national and international organizations, unpublished data that it collects in the field, and estimates by the UNIDO Secretariat. Nevertheless, coverage may be less than complete, particularly for the informal sector. To the extent that direct information on inputs and outputs is not available, estimates may be used that may result in errors in industry totals. Moreover, countries use different reference periods (calendar or fiscal year) and valuation methods (basic, producers', or purchasers' prices) to estimate value added. (See also *About the data* for table 4.2.)

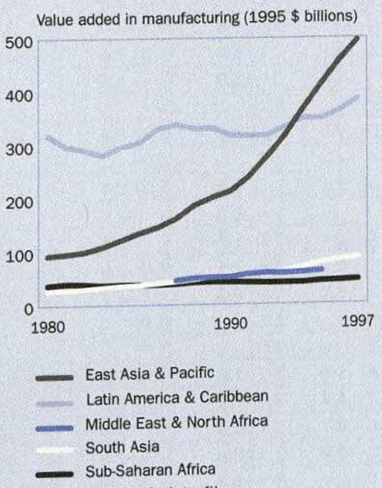
Data on manufacturing value added in U.S. dollars are from the World Bank's national accounts files. These figures may differ from those used by UNIDO to calculate the shares of value added by industry. Thus estimates of value added in a particular industry group calculated by applying the shares to total value added will not match those from UNIDO sources.

The classification of manufacturing industries in the table accords with the United Nations International Standard Industrial Classification (ISIC) revision 2. First published in 1948, the ISIC has its roots in the work of the League of Nations Committee of Statistical Experts. The committee's efforts, interrupted by the second world war, were taken up by the United Nations Statistical Commission, which at its first session appointed a committee on industrial classification. The ISIC has been revised at approximately 20-year intervals. The last revision, ISIC revision 3, was completed in 1989. Revision 2 is still widely used for compiling cross-country data, however, and concordances matching ISIC categories to national systems of classification and to related systems such as the Standard International Trade Classification (SITC) are readily available.

In establishing a classification system, compilers must define both the types of activities to be described and the organizational units whose activities are to be reported. There are many possibilities, and the choices made affect how the resulting statistics can be interpreted and how useful they are in analyzing economic behavior. The ISIC emphasizes commonalities in the production process and is explicitly not intended to measure outputs (for which there is a newly developed Central Product Classification); nevertheless, the ISIC views an activity as defined by "...a process resulting in a homogeneous set of products" (United Nations 1990b [ISIC, series M, no. 4, rev. 3], p. 9). Typically, firms use a multitude of processes to produce a final product. For example, an automobile manufacturer engages in forging, welding, and painting as well as advertising, accounting, and many other service activities. In some cases the processes may be carried out by different technical units within the larger enterprise, but collecting data at such a detailed level is not practical. Nor would it be useful to record production data at the very highest level of a large, multiplant, multiproduct firm. The ISIC has therefore adopted as the definition of an establishment "an enterprise or part of an enterprise which independently engages in one, or predominantly one, kind of economic activity at or from one location ... for which data are available..." (United Nations 1990b, p. 25). By design, this definition matches the reporting unit required for the production accounts of the SNA.

Figure 4.3

Dominant countries drive regional trends in manufacturing growth



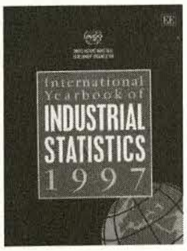
Source: World Bank data files.

Regional trends in manufacturing growth reflect trends in the dominant countries. Led by manufacturing growth in China, East Asia and the Pacific has overtaken Latin America and the Caribbean, where growth is faltering in Brazil. South Asia is rising with India. In Sub-Saharan Africa, where there is no dominant manufacturer, growth has been slow.

Definitions

- **Value added in manufacturing** is the sum of gross output less the value of intermediate inputs used in production for industries classified in ISIC major division 3. • **Food, beverages, and tobacco** comprise ISIC division 31. • **Textiles and clothing** comprise ISIC division 32. • **Machinery and transport equipment** comprise ISIC groups 382–84. • **Chemicals** comprise ISIC groups 351 and 352. • **Other manufacturing** includes wood and related products (ISIC division 33), paper and related products (ISIC division 34), petroleum and related products (ISIC groups 353–56), basic metals and mineral products (ISIC divisions 36 and 37), fabricated metal products and professional goods (ISIC groups 381 and 385), and other industries (ISIC group 390). When data for textiles and clothing, machinery and transport equipment, or chemicals are shown as not available, they are included in other manufacturing.

Data sources



Data on value added in manufacturing in U.S. dollars are from the World Bank's national accounts files. The data used to calculate shares of value added by industry are provided to the World Bank in electronic files by UNIDO. The most recent published source is UNIDO's *International Yearbook of Industrial Statistics 1997.* The ISIC system is described in the United Nations' *International Standard Industrial Classification of all Economic Activities, Third Revision* (1990b). The discussion of the ISIC draws on Jacob Ryten's paper "Fifty Years of ISIC: Historical Origins and Future Perspectives" (1998).

4.4 Growth of merchandise trade

	Export volume		Import volume		Export value		Import value		Net barter terms of trade	
	average annual % growth		average annual % growth		average annual % growth		average annual % growth		1995 = 100	
	1980–90	**1990–96**	**1980–90**	**1990–96**	**1980–90**	**1990–96**	**1980–90**	**1990–96**	**1990**	**1996**
Albania	*–5.9*	..	*7.2*	..	..	..	..	..	..	..
Algeria	*4.9*	–0.7	*–6.9*	–1.8	*–0.8*	0.0	*–2.3*	–39.4	126	124
Angola	*13.8*	6.4	*–1.7*	1.0	*10.0*	8.6	*3.1*	3.6	108	103
Argentina	*2.8*	1.7	*–4.4*	18.5	*5.1*	3.3	*0.2*	20.2	90	89
Armenia[a]	..	..	..	..	..	1.0	..	2.1	..	..
Australia[a]	6.2	0.2	5.5	1.0	6.6	0.7	6.4	1.2	..	..
Austria[a]	6.6	..	5.7	..	10.2	1.4	8.7	1.0	..	..
Azerbaijan	..	..	..	..	..	..	..	..	..	..
Bangladesh	*10.0*	9.6	*6.0*	8.4	*12.0*	10.0	*10.4*	11.1	108	99
Belarus	..	..	..	..	..	..	..	..	..	..
Belgium	..	..	..	..	..	..	..	..	..	..
Benin	*–6.2*	–17.2	*–6.6*	20.8	*–2.4*	–14.0	*–2.5*	29.9	109	102
Bolivia	*2.7*	–3.8	*–2.2*	7.9	*1.0*	–5.0	*2.8*	9.1	124	111
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana[a]	..	..	..	..	17.9	0.6	9.4	0.3	..	..
Brazil	*5.5*	2.2	*3.3*	3.8	*5.8*	3.8	*4.9*	4.3	97	106
Bulgaria[a]	*–3.8*		*–3.3*	–12.5	*2.6*		..	3.3	..	..
Burkina Faso	*7.7*	–17.0	*4.1*	–2.1	*13.4*	–16.0	*8.5*	1.4	117	102
Burundi[a]	..	..	..	..	2.5	0.1	2.2	–0.1	..	..
Cambodia	..	..	..	..	..		..		..	..
Cameroon	*10.5*	6.0	*–1.1*	–9.2	*9.9*	6.7	*3.3*	–8.1	110	112
Canada[a]	6.4	1.0	7.4	0.8	6.8	1.2	7.9	0.8	..	..
Central African Republic	*–3.9*	14.1	*0.9*	–0.7	*–1.1*	19.3	*6.0*	1.1	88	101
Chad	*2.5*	4.7	*2.0*	–1.7	*8.8*	7.4	*6.4*	–0.7	98	112
Chile	*6.8*	6.2	*10.4*	7.6	*15.0*	5.2	*14.3*	8.4	96	76
China[†,a]	..	..	..	..	12.8	1.6	13.5	1.0	..	..
Hong Kong, China[a]	15.4	0.8	13.7	1.0	16.8	0.9	15.0	1.2	..	..
Colombia	*13.6*	0.5	*–1.7*	–1.9	*11.3*	1.5	*2.4*	–1.1	98	93
Congo, Dem. Rep.	*–3.7*	–3.8	*1.5*	–7.5	*0.6*	–5.0	*6.3*	–5.4	125	101
Congo, Rep.	*–0.6*	3.2	*–6.1*	1.8	*–4.0*	2.8	*–2.2*	2.5	113	109
Costa Rica	*5.8*	3.9	*6.3*	5.4	*7.0*	6.6	*10.5*	5.6	86	96
Côte d'Ivoire	*3.1*	–1.3	*–1.8*	13.0	*3.5*	0.6	*2.4*	14.8	100	103
Croatia[a]	..	..	..	..	..	1.3	..	2.9	..	..
Cuba	*–7.0*	–21.1	*–5.5*	–3.9	*–3.4*	–18.9	*–1.0*	–2.8	95	104
Czech Republic	..	..	..	..	..	..	..	32.7	..	..
Denmark[a]	4.1	0.2	3.1	0.4	8.4	1.0	6.3	1.2	..	..
Dominican Republic	*0.1*	2.3	..	8.2	–2.1	4.3	3.3	7.9	85	88
Ecuador	*2.2*	6.9	*–2.4*	1.4	*–0.1*	4.1	*2.6*	2.2	128	108
Egypt, Arab Rep.	*–1.2*	8.7	*–6.2*	7.1	*–2.6*	8.5	*–1.7*	9.3	116	103
El Salvador	*–5.5*	5.7	*–0.2*	6.3	*–4.7*	1.8	*3.4*	3.6	102	90
Eritrea	..	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	..	..	..	..	..
Ethiopia	*1.0*	6.2	*–1.0*	7.6	*–1.6*	8.3	*2.1*	9.1	..	..
Finland[a]	2.3	1.2	4.4	1.1	7.4	2.2	6.9	1.7	..	..
France[a]	3.6	0.5	3.7	0.4	7.5	1.1	6.5	1.0	..	..
Gabon	*0.7*	1.5	*–5.8*	–2.8	*–1.2*	0.2	*–0.9*	2.6	163	127
Gambia, The	*–2.9*	–12.0	*4.4*	–3.7	*–3.3*	–11.3	*9.2*	–1.2	109	101
Georgia	..	..	..	..	..	..	..	..	..	..
Germany[a,b]	4.5	..	4.9	..	9.2	1.1	7.1	0.7	..	..
Ghana	*11.8*	4.0	*7.8*	14.8	*10.9*	4.0	*11.6*	16.6	112	100
Greece[a]	5.0	..	6.4	..	5.8	0.8	6.6	0.6	..	..
Guatemala	*–1.1*	2.5	*2.7*	6.4	*–0.1*	2.2	*6.3*	6.9	97	87
Guinea	..	..	..	..	*4.1*	..	*10.0*	..	..	..
Guinea-Bissau[a]	..	..	..	..	*–4.6*	0.0	*–5.2*	1.4	..	..
Haiti[a]	..	..	..	..	–1.2	0.2	–2.9	2.8	..	..
Honduras	*0.7*	10.6	*–2.9*	11.5	*3.0*	4.6	*0.8*	10.8	132	97
† Data for Taiwan, China[a]	11.6	0.3	9.9	0.4	14.8	0.9	12.4	1.1	..	..

Growth of merchandise trade 4.4

	Export volume		**Import volume**		**Export value**		**Import value**		**Net barter terms of trade**	
	average annual % growth		average annual % growth		average annual % growth		average annual % growth		1995 = 100	
	1980–90	**1990–96**	**1980–90**	**1990–96**	**1980–90**	**1990–96**	**1980–90**	**1990–96**	**1990**	**1996**
Hungary[a]	3.4	0.5	1.3	0.1	1.4	0.8	0.1	0.0	..	..
India	*8.0*	3.6	*5.7*	2.5	*11.0*	5.2	*7.3*	3.0	92	98
Indonesia	*7.1*	8.0	*0.7*	3.4	*2.0*	6.7	*4.6*	4.3	118	104
Iran, Islamic Rep.	*1.1*	4.8	*–7.9*	0.3	*–4.2*	5.5	*–3.1*	5.4	145	125
Iraq	*2.1*	–7.3	*–12.3*	–12.8	*–3.2*	–9.0	*–7.7*	–11.3	121	91
Ireland[a]	9.3	1.4	4.8	1.1	12.7	1.8	7.0	1.6	..	..
Israel[a]	6.9	1.0	5.8	0.7	8.3	1.1	5.9	1.0	..	..
Italy[a]	4.4	1.0	5.4	0.5	8.7	1.2	6.9	0.9	..	..
Jamaica	*4.5*	4.7	*4.1*	6.4	*8.2*	0.7	*6.0*	7.4	105	99
Japan[a]	5.1	0.1	6.6	0.8	8.9	0.7	5.1	1.2	..	..
Jordan	*6.8*	2.5	*–6.2*	4.1	*8.9*	3.9	*–2.6*	5.0	100	101
Kazakhstan	..	..	..	..	..	..	..	..	..	..
Kenya	*3.2*	7.3	*5.0*	6.0	*0.1*	8.5	*7.5*	7.6	105	98
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	*13.0*	6.3	*12.6*	5.4	*16.7*	5.1	*15.6*	5.8	101	92
Kuwait	*–1.1*	13.5	*–10.4*	5.8	*–5.4*	18.0	*–5.8*	5.3	91	109
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..
Lao PDR[a]	..	..	..	..	11.2	1.5	7.4	2.4	..	..
Latvia	..	..	..	..	..	..	..	..	..	..
Lebanon	*1.2*	10.2	*–8.2*	5.9	*4.5*	13.5	*–3.8*	9.2	104	111
Lesotho[a]	..	..	..	..	3.0	1.3	3.4	0.3	..	..
Libya	*3.1*	–6.2	*–7.0*	3.1	*–2.8*	–5.1	*–2.1*	8.8	146	127
Lithuania	..	..	..	..	..	..	..	..	..	..
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..
Madagascar	*2.4*	–1.4	*–1.4*	2.0	*0.0*	1.2	*2.7*	3.7	98	102
Malawi	*1.8*	0.6	*6.2*	–0.6	*5.0*	–1.5	*10.7*	0.8	125	104
Malaysia	*10.8*	5.2	*7.0*	5.3	*10.6*	6.5	*11.3*	6.5	102	102
Mali	*7.3*	4.7	*2.9*	11.2	*13.4*	6.2	*7.2*	13.2	101	102
Mauritania	..	14.0	..	3.8	8.0	11.2	–2.1	4.0	111	98
Mauritius	*9.8*	–2.4	*17.9*	4.6	*20.9*	–2.4	*23.2*	5.9	94	104
Mexico	*3.2*	7.9	*11.3*	8.7	1.2	4.0	*16.7*	8.4	123	100
Moldova	..	..	..	..	..	..	..	..	..	..
Mongolia[a]	..	..	..	..	*–0.5*	2.7	*–3.8*	3.4	..	..
Morocco	*5.4*	0.0	*5.5*	–2.0	*11.2*	–0.3	*8.7*	3.7	131	104
Mozambique	*–2.8*	2.8	*3.9*	–6.0	*1.5*	3.3	*7.5*	–5.3	102	103
Myanmar	*–9.8*	16.0	*–7.0*	18.3	*–7.3*	14.9	*–2.2*	20.3	115	97
Namibia	..	..	..	..	..	..	..	..	..	..
Nepal[a]	..	..	..	..	8.1	–0.3	6.9	1.4	..	..
Netherlands[a]	4.5	0.7	4.5	0.8	4.6	1.3	4.4	1.3	..	..
New Zealand[a]	3.5	0.2	4.3	1.1	6.2	1.0	5.4	1.7	..	..
Nicaragua	*–5.6*	–2.7	*–7.7*	10.5	*–4.1*	–2.7	*–4.5*	9.3	100	85
Niger	*–5.1*	1.2	*–0.1*	4.7	*0.0*	–0.8	*3.1*	6.4	119	100
Nigeria	*1.8*	9.5	*–14.8*	4.1	*–2.6*	8.9	*–10.3*	9.5	160	128
Norway[a]	4.1	0.6	3.4	0.7	5.3	1.0	6.2	1.2	..	..
Oman	..	..	..	..	2.9	0.8	0.7	0.2	..	..
Pakistan	*10.0*	3.6	*1.4*	4.4	*11.1*	6.7	*4.4*	5.8	88	98
Panama	*1.5*	12.4	*–6.2*	6.9	*1.3*	13.0	*–3.7*	9.7	111	103
Papua New Guinea	*6.7*	–0.6	..	..	4.9	0.7	1.3	–0.8	..	..
Paraguay	*15.9*	–5.5	*5.7*	–20.7	*20.6*	–14.6	*9.3*	–20.1	170	100
Peru	*–3.5*	5.5	*0.5*	7.7	*1.1*	3.9	*5.6*	8.0	112	95
Philippines	*3.8*	5.7	*7.2*	6.8	*8.3*	7.0	*9.9*	7.3	94	99
Poland[a]	4.8	1.1	1.5	0.9	1.4	1.5	–3.2	0.5	..	..
Portugal[a]	*11.9*	..	*15.1*	..	15.1	1.4	10.3	0.9	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania[a]	..	..	..	..	–4.0	2.6	–3.8	3.2	..	..
Russian Federation	..	..	..	..	..	..	..	..	..	..

4.4 Growth of merchandise trade

	Export volume		Import volume		Export value		Import value		Net barter terms of trade	
	average annual % growth		average annual % growth		average annual % growth		average annual % growth		1995 = 100	
	1980–90	**1990–96**	**1980–90**	**1990–96**	**1980–90**	**1990–96**	**1980–90**	**1990–96**	**1990**	**1996**
Rwanda	*4.3*	–3.8	*–1.8*	42.0	*2.4*	–5.6	*2.6*	42.2	119	84
Saudi Arabia	*2.8*	3.5	*–11.4*	1.3	*–2.0*	5.1	*–6.8*	6.5	133	116
Senegal	*0.3*	6.4	*1.2*	5.3	*4.4*	8.3	*4.1*	6.4	96	102
Sierra Leone	*1.6*	–22.2	*–3.2*	1.8	*2.5*	–22.7	*0.7*	1.4	107	112
Singapore[a]	12.1	1.3	8.6	1.0	9.9	1.6	8.0	1.5	..	..
Slovak Republic	..	..	..	..	..	..	..	..	..	..
Slovenia	..	..	..	..	..	..	..	..	..	..
South Africa[a]	3.3	0.5	–0.8	0.8	0.8	0.6	–1.3	1.6	..	..
Spain[a]	3.0	..	8.4	..	10.9	1.3	10.6	1.0	..	..
Sri Lanka	*5.6*	9.0	*2.8*	9.0	*6.0*	5.8	*5.9*	8.2	93	93
Sudan	*–3.7*	–0.6	*–6.6*	4.7	*1.0*	–4.0	*–2.8*	5.3	124	97
Sweden[a]	4.4	0.2	5.0	0.3	8.0	1.6	6.7	1.4	..	..
Switzerland[a]	*3.7*	..	*4.3*	..	9.5	1.0	8.8	1.0	..	..
Syrian Arab Republic	*11.1*	0.3	*–13.2*	0.3	*8.8*	1.9	*–10.5*	3.1	111	114
Tajikistan	..	..	..	..	..	..	..	..	..	..
Tanzania	*1.3*	–4.4	*–1.4*	–3.4	*–0.5*	–4.3	*2.1*	–2.0	107	102
Thailand	*18.3*	8.4	*17.3*	3.6	*22.0*	6.5	*20.2*	4.1	114	105
Togo	*8.8*	9.3	*8.6*	8.3	*7.0*	9.6	*12.3*	9.9	105	102
Trinidad and Tobago	*0.2*	2.5	*–11.5*	7.1	*–4.3*	6.2	*–9.8*	10.8	116	126
Tunisia	*11.0*	1.9	*4.7*	1.1	*10.5*	3.2	*8.3*	4.1	114	104
Turkey[a]	..	0.6	..	1.0	14.0	1.3	9.3	1.9	..	..
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uganda	*–6.2*	30.0	*–3.4*	24.7	*–11.3*	29.1	*1.5*	26.5	124	106
Ukraine	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	*10.6*	1.2	*1.4*	8.0	*3.4*	3.4	*5.9*	13.2	131	117
United Kingdom[a]	4.5	0.8	6.7	0.6	5.8	1.0	8.4	1.0	..	..
United States[a]	3.6	0.6	7.2	0.9	5.7	0.8	8.2	1.1	..	..
Uruguay	*3.6*	–0.5	*6.5*	6.7	*9.6*	1.4	*9.7*	..	93	95
Uzbekistan	..	..	..	..	..	..	..	..	..	..
Venezuela	*4.0*	0.6	*–4.9*	5.7	*–0.9*	–0.6	*0.0*	7.8	130	108
Vietnam[a]	..	..	..	..	18.9	2.7	8.7	3.2	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	*–0.7*	14.0	*–0.5*	4.7	*8.2*	8.9	*3.3*	8.3	152	102
Zimbabwe[a]	*2.0*	..	*–0.6*	..	2.5	1.3	–0.4	..	..	..

a. Data are from the International Monetary Fund's International Financial Statistics database. b. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Growth of merchandise trade 4.4

About the data

Data on international trade in goods are recorded in each country's balance of payments and by customs services. While the balance of payments focuses on the financial transactions that accompany trade, customs data record the direction of trade and the physical quantities and value of goods entering or leaving the customs area. Customs data may differ from those recorded in the balance of payments because of differences in valuation and the time of recording. The 1993 United Nations System of National Accounts and the fifth edition of the International Monetary Fund's (IMF) *Balance of Payments Manual* (1993) have attempted to reconcile the definitions and reporting standards for international trade statistics, but differences in sources, timing, and national practices limit comparability. Real growth rates derived from trade volume indexes and terms of trade based on unit price indexes may therefore differ from those derived from national accounts aggregates.

Trade in goods, or merchandise trade, includes all goods that add to or subtract from an economy's material resources. Currency in circulation, titles of ownership, and securities are excluded, but monetary gold is included. Trade data are collected on the basis of a country's customs area, which in most cases is the same as its geographic area. Goods provided as part of foreign aid are included, but goods destined for extraterritorial agencies (such as embassies) are not.

Collecting and tabulating trade statistics is difficult. Some developing countries lack the capacity to report timely data. As a result it is necessary to estimate their trade from the data reported by their partners. (See *About the data* for table 6.2 for further discussion of the use of partner country reports.) In some cases economic or political concerns may lead national authorities to suppress or misrepresent data on certain trade flows, such as oil, military equipment, or the exports of a dominant producer. In other cases reported trade data may be distorted by deliberate underinvoicing or overinvoicing to effect capital transfers or avoid taxes. And in some regions smuggling and black market trading result in unreported trade flows.

By international agreement customs data are reported to the United Nations Statistical Division, which maintains the Commodity Trade, or COMTRADE, database. The United Nations Conference on Trade and Development (UNCTAD) compiles a variety of international trade statistics, including price and volume indexes, based on the COMTRADE data. The IMF and the World Trade Organization also compile data on trade prices and volumes. The growth rates and terms of trade for low- and middle-income economies were calculated from index numbers compiled by UNCTAD. Volume measures for high-income economies were derived by deflating the value of trade using deflators from the IMF's *International Financial Statistics*. Terms of trade were computed from the same indicators.

The terms of trade measure the relative prices of a country's exports and imports. There are a number of ways to calculate terms of trade. The most common is the net barter, or commodity, terms of trade, constructed as the ratio of the export price index to the import price index. When the net barter terms of trade increase, a country's exports are becoming more valuable or its imports cheaper.

Definitions

- **Growth rates of export and import volumes** are average annual growth rates calculated for low- and middle-income economies from UNCTAD's quantum index series or from export and import data deflated by the IMF's trade price deflators. • **Growth rates of export and import values** are average annual growth rates calculated from UNCTAD's value indexes or from current values of merchandise exports and imports.
- **Net barter terms of trade** are the ratio of the export price index to the corresponding import price index measured relative to the base year 1995.

Data sources

HANDBOOK OF INTERNATIONAL TRADE
AND DEVELOPMENT STATISTICS
MANUEL DE STATISTIQUES DU COMMERCE
INTERNATIONAL ET DU DÉVELOPPEMENT

The main source of trade data for developing countries is UNCTAD's annual *Handbook of International Trade and Development Statistics*. The IMF's *International Financial Statistics* includes data on the export and import values and deflators for high-income and selected developing economies.

4.5 Structure of merchandise exports

	Merchandise exports $ millions		Food % of total		Agricultural raw materials % of total		Fuels % of total		Ores and metals % of total		Manufactures % of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	..	210	..	11	..	14	..	1	..	9	..	65
Algeria	15,624	13,894	1	0	0	0	98	96	0	1	0	3
Angola	1,902	4,157[a]	9	..	0	..	78	..	0	..	13	..
Argentina	8,019	26,263	65	49	6	3	3	12	2	2	23	34
Armenia	..	256[a]	..	..	..	..	..	..	..	..	..	..
Australia	21,279	56,228	34	24	11	8	11	20	17	16	22	29
Austria	17,478	57,684[a]	4	*4*	8	*3*	2	*1*	4	*3*	83	*88*
Azerbaijan	..	781[a]	..	..	..	..	..	..	..	..	..	..
Bangladesh	740	3,887[a]	12	*10*	19	2	0	*0*	0	*0*	68	*87*
Belarus	..	7,174[a]	..	..	..	..	..	..	..	..	..	..
Belgium[b]	63,967	165,725	..	..	..	..	..	..	..	..	..	..
Benin	49	289[a]	62	..	25	..	4	..	1	..	3	..
Bolivia	1,036	1,162	8	32	3	10	24	9	62	33	3	16
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana[c]	..	..	..	..	..	..	..	..	..	..	..	..
Brazil	20,132	52,478	46	31	4	4	2	1	9	9	37	54
Bulgaria	10,372	4,232[a]	..	..	..	..	..	..	..	..	..	..
Burkina Faso	90	190[a]	41	..	48	..	0	..	0	..	11	..
Burundi	129	73[a]	70	..	6	..	..	..	6	..	4	..
Cambodia	*15*	621[a]	*2*	..	*7*	..	*0*	..	*27*	..	*64*	..
Cameroon	1,321	1,814[a]	48	*24*	16	*25*	31	*36*	2	*6*	4	*8*
Canada	63,105	211,961	12	8	11	8	14	10	14	6	48	63
Central African Republic	111	270[a]	31	*1*	43	*24*	*0*	*0*	0	*26*	26	*43*
Chad	72	134[a]	4	..	81	..	0	..	0	..	15	..
Chile	4,584	16,296	15	25	10	9	1	0	64	48	9	16
China†	18,136[a]	182,792	..	7	..	1	..	4	..	2	..	85
Hong Kong, China[d]	19,703	188,062	3	3	2	1	0	1	2	2	71	89
Colombia	3,945	11,455	72	32	5	5	3	31	0	1	20	31
Congo, Dem. Rep.	2,507	1,140[a]	11	..	3	..	8	..	47	..	6	..
Congo, Rep.	955	1,938[a]	1	*1*	2	*8*	90	*88*	0	*0*	7	*3*
Costa Rica	1,032	4,273[a]	64	*66*	1	*7*	1	*1*	0	*1*	28	*25*
Côte d'Ivoire	2,979	4,279[a]	64	..	28	..	2	..	0	..	5	..
Croatia	..	4,341	..	12	..	6	..	10	..	3	..	69
Cuba	5,541	1,755[a]	89	..	0	..	*3*	..	5	..	0	..
Czech Republic	..	22,723	..	5	..	3	..	4	..	3	..	85
Denmark	16,407	48,793	33	23	5	3	3	4	2	1	55	63
Dominican Republic	704	4,802[a]	73	*19*	0	*0*	0	*0*	3	*0*	24	*78*
Ecuador	2,481	5,149	33	58	1	4	63	30	0	0	3	9
Egypt, Arab Rep.	3,046	3,908	7	8	16	4	64	43	2	5	11	40
El Salvador	720	1,352	47	55	12	1	3	3	3	2	35	39
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	2,926	..	16	..	9	..	6	..	3	..	66
Ethiopia[e]	424	551[a]	74	*73*	18	*13*	7	*3*	0	*0*	0	*11*
Finland	14,140	40,933	3	3	19	7	4	2	4	4	70	83
France	110,865	282,944	16	13	2	1	4	3	4	2	73	78
Gabon	2,189	3,130[a]	*1*	*0*	*7*	*13*	88	*83*	12	*2*	*5*	*2*
Gambia, The	36	158[a]	99	..	0	..	..	..	*3*	..	*7*	..
Georgia	..	230[a]	..	..	..	..	..	..	..	..	..	..
Germany[f]	191,647	510,570	5	5	1	1	4	1	3	2	85	83
Ghana	942	1,737[a]	78	..	4	..	0	..	17	..	1	..
Greece	5,142	10,788	26	27	2	4	16	9	9	7	47	52
Guatemala	1,486	2,344	53	61	16	4	1	4	5	1	24	30
Guinea	374	938[a]	4	..	0	..	*0*	..	95	..	1	..
Guinea-Bissau	11	71[a]	85	..	2	..	*0*	..	0	..	8	..
Haiti	376	221[a]	31	..	1	..	*0*	..	4	..	63	..
Honduras	813	1,033	75	65	5	3	0	0	6	3	12	27
† Data for Taiwan, China	19,837	121,318	..	..	..	..	..	..	..	..	..	..

Structure of merchandise exports 4.5

	Merchandise exports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	8,677	19,093	22	14	3	2	5	2	4	3	65	77
India	7,511	32,201 [a]	28	*19*	5	*3*	0	*2*	7	*3*	59	*72*
Indonesia	21,909	53,220	8	11	14	5	72	25	4	5	2	42
Iran, Islamic Rep.	13,804	25,079 [a]	1	..	1	..	93	..	0	..	5	..
Iraq	28,321	2,309 [a]	0	..	0	..	99	..	0	..	0	..
Ireland	8,473	53,258	37	12	2	1	1	0	3	1	54	81
Israel	5,540	22,501	12	4	4	2	0	1	2	1	82	92
Italy	77,640	238,161	7	6	1	1	6	1	2	1	84	89
Jamaica	942	1,837 [a]	14	*24*	0	*0*	2	*0*	21	*6*	63	*69*
Japan	129,542	420,492	1	1	1	1	0	1	2	1	95	95
Jordan	402	1,453 [a]	25	*25*	1	*2*	0	*0*	40	*24*	34	*49*
Kazakhstan	..	6,366 [a]	..	..	..	..	..	..	..	..	..	..
Kenya	1,313	1,952	44	56	8	7	33	9	2	3	12	25
Korea, Dem. Rep.	..	907 [a]	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	17,446	135,986 [a]	7	*2*	1	*1*	0	*3*	1	*1*	90	*92*
Kuwait	20,435	14,122	1	0	0	0	89	85	0	0	10	14
Kyrgyz Republic	..	551 [a]	..	*28*	..	*11*	..	*15*	..	*6*	..	*38*
Lao PDR	*9*	192 [a]	*13*	..	*41*	..	..	..	*4*	..	*34*	..
Latvia	..	1,672	..	14	..	24	..	1	..	2	..	58
Lebanon	930	711 [a]	28	..	2	..	0	..	9	..	58	..
Lesotho[c]	..	..	..	..	..	..	..	..	..	..	..	..
Libya	21,910	9,824 [a]	..	..	..	..	100	..	..	..	*0*	..
Lithuania	..	3,343	..	18	..	5	..	4	..	2	..	70
Macedonia, FYR	..	1,263 [a]	..	..	..	..	..	..	..	..	..	..
Madagascar	387	278	80	54	4	6	6	3	4	7	6	28
Malawi	269	683 [a]	91	*90*	2	*2*	0	*0*	0	*0*	6	*7*
Malaysia	12,939	77,894 [a]	15	*9*	31	*5*	25	*8*	10	*1*	19	*76*
Mali	235	275 [a]	30	..	69	..	*0*	..	0	..	1	..
Mauritania	255	536 [a]	16	..	1	..	0	..	83	..	0	..
Mauritius	420	1,600	72	28	0	1	0	0	0	0	27	71
Mexico	15,442	109,890	12	6	2	1	67	10	6	2	12	81
Moldova	..	875 [a]	..	*72*	..	*2*	..	*1*	..	*3*	..	*23*
Mongolia	..	430 [a]	..	*2*	..	*28*	..	*0*	..	*60*	..	*10*
Morocco	2,403	4,674	28	31	3	3	5	2	41	15	24	49
Mozambique	511	272	68	*69*	7	*9*	2	*1*	5	*4*	18	*17*
Myanmar	460	1,161 [a]	40	..	33	..	9	..	10	..	7	..
Namibia[c]	..	..	..	..	..	..	..	..	..	..	..	..
Nepal	94	298	21	5	48	0	..	..	0	0	30	95
Netherlands	73,871	184,295	20	16	3	3	22	7	4	2	50	71
New Zealand	5,262	13,983 [a]	48	*47*	26	*17*	1	*2*	4	*4*	20	*29*
Nicaragua	414	658	75	69	8	4	2	1	1	1	14	25
Niger	580	128 [a]	11	..	1	..	1	..	85	..	2	..
Nigeria	25,057	16,028 [a]	2	..	0	..	97	..	0	..	0	..
Norway	18,481	48,528	7	8	3	1	48	54	10	7	32	24
Oman	3,748	7,600	1	4	0	0	96	77	0	1	3	17
Pakistan	2,588	8,632	24	10	20	3	7	1	0	0	48	86
Panama	353	644	67	76	0	1	23	4	1	2	9	17
Papua New Guinea	1,133 [a]	2,685 [a]	*33*	..	*7*	..	*0*	..	*50*	..	*3*	..
Paraguay	310	1,141	38	72	50	13	*0*	0	*0*	0	12	15
Peru	3,266	6,115	16	35	4	3	21	7	43	39	17	17
Philippines	5,751	24,988	36	8	6	1	1	1	21	2	21	45
Poland	16,997	25,697	6	12	3	2	13	7	7	6	61	73
Portugal	4,629	23,510	12	7	9	3	6	2	2	1	70	86
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	12,230	8,420	..	7	..	4	..	6	..	4	..	79
Russian Federation	..	87,368	..	2	..	3	..	46	..	11	..	23

4.5 Structure of merchandise exports

	Merchandise exports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	138	100[a]	82	..	7	..	0	..	10	..	0	..
Saudi Arabia	109,113	61,603[a]	0	*1*	0	*0*	99	*90*	0	*0*	1	*9*
Senegal	477	393[a]	43	*16*	3	*9*	19	*15*	20	*11*	15	*50*
Sierra Leone	302	215[a]	24	..	1	..	0	..	34	..	40	..
Singapore	19,375	124,431	8	4	10	1	25	7	2	2	47	84
Slovak Republic	..	8,790	..	5	..	3	..	5	..	4	..	79
Slovenia	..	8,368	..	4	..	2	..	1	..	4	..	89
South Africa[g]	25,539	31,211[a]	9	*11*	2	*4*	4	*11*	7	*12*	18	*55*
Spain	20,827	101,228[a]	18	*16*	2	*1*	4	*2*	5	*2*	72	*78*
Sri Lanka	1,043	4,455	47	..	18	..	15	..	1	..	19	..
Sudan	584	518	47	*68*	51	*28*	1	*0*	1	*0*	1	*3*
Sweden	30,788	81,057	2	3	10	5	4	2	5	3	78	80
Switzerland	29,471	75,999	3	3	1	1	0	0	5	3	90	93
Syrian Arab Republic	2,108	4,049[a]	4	*12*	9	*7*	79	*63*	1	*1*	7	*17*
Tajikistan	..	588[a]	..	..	..	..	..	..	..	..	..	..
Tanzania	528	716[a]	58	..	18	..	5	..	5	..	14	..
Thailand	6,369	57,567	47	19	11	4	0	2	14	1	25	71
Togo	335	407[a]	21	..	2	..	26	..	40	..	11	..
Trinidad and Tobago	4,077	2,545	2	9	0	0	93	46	0	0	5	44
Tunisia	2,234	5,559	7	11	1	1	52	9	4	1	36	78
Turkey	2,910	26,245	51	20	14	1	1	1	7	3	27	75
Turkmenistan	..	549[a]	..	..	..	..	..	..	..	..	..	..
Uganda	465	618[a]	96	..	2	..	1	..	1	..	1	..
Ukraine	..	16,132[a]	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	21,628[a]	30,423[a]	..	..	..	..	..	..	..	..	..	..
United Kingdom	114,422	278,784	7	7	1	1	13	6	5	2	71	83
United States	212,887	637,505	18	9	5	3	4	2	5	2	66	81
Uruguay	1,059	2,713	39	49	22	13	0	1	1	1	38	37
Uzbekistan	..	2,893[a]	..	..	..	..	..	..	..	..	..	..
Venezuela	19,293	21,658	0	2	0	0	94	83	4	2	2	12
Vietnam	123	8,758[a]	30	..	23	..	32	..	1	..	14	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	23	2,479[a]	45	*3*	4	*1*	0	*95*	0	*1*	47	*1*
Yugoslavia, FR (Serb./Mont.)	..	*2,368*	..	*16*	..	*5*	..	*2*	..	*14*	..	*61*
Zambia	1,330	1,178[a]	1	..	0	..	0	..	82	..	16	..
Zimbabwe	433	2,119	40	46	3	11	3	1	17	10	36	32
World	1,733,712 t	5,241,880 t	13 w	8 w	4 w	2 w	11 w	6 w	5 w	3 w	65 w	77 w
Low income	..	..	30	..	10	..	19	..	7	..	33	..
Middle income	..	1,135,665	..	13	..	3	..	16	..	5	..	58
Lower middle income	..	580,191	..	11	..	3	..	18	..	5	..	57
Upper middle income	222,723	553,160	20	*14*	9	*3*	38	*22*	9	*5*	21	*54*
Low & middle income	..	1,234,520	*24*	14	*8*	3	35	16	*8*	5	*22*	58
East Asia & Pacific	..	419,740	..	10	..	2	..	7	..	2	..	72
Europe & Central Asia	..	..	..	7	..	3	..	22	..	7	..	53
Latin America & Carib.	96,124	274,560	32	25	4	3	31	16	12	9	20	46
Middle East & N. Africa	..	154,377	3	*4*	1	*0*	87	*75*	3	*2*	8	*19*
South Asia	12,087	49,253	28	*16*	10	*3*	3	*1*	5	*2*	54	*76*
Sub-Saharan Africa	..	..	22	..	6	..	27	..	9	..	12	..
High income	1,284,906	4,030,189	11	7	4	2	7	4	4	3	73	81
Europe EMU	519,571	1,492,584	11	9	3	1	6	2	3	2	75	81

a. Data are from IMF, *Direction of Trade Statistics*. b. Includes Luxembourg. c. Included with South Africa. d. Includes reexports. e. Data prior to 1992 include Eritrea. f. Data prior to 1990 refer to the Federal Republic of Germany before unification. g. Data are for the South African Customs Union, which comprises Botswana, Lesotho, Namibia, and South Africa.

Structure of merchandise exports 4.5

About the data

Data on merchandise trade come from customs reports of goods entering an economy or from reports of the financial transactions related to merchandise trade recorded in the balance of payments. Because of differences in timing and definitions, estimates of trade flows from customs reports are likely to differ from those based on the balance of payments. Furthermore, several international agencies process trade data, each making estimates to correct for unreported or misreported data, and this leads to other differences in the available data.

The most detailed source of data on international trade in goods is the COMTRADE database maintained by the United Nations Statistical Division (UNSD). The International Monetary Fund (IMF) also collects customs-based data on exports and imports of goods.

The value of exports is recorded as the cost of the goods delivered to the frontier of the exporting country for shipment—the f.o.b. (free on board) value. Many countries report trade data in U.S. dollars. When countries report in local currency, the UNSD applies the average official exchange rate for the period shown.

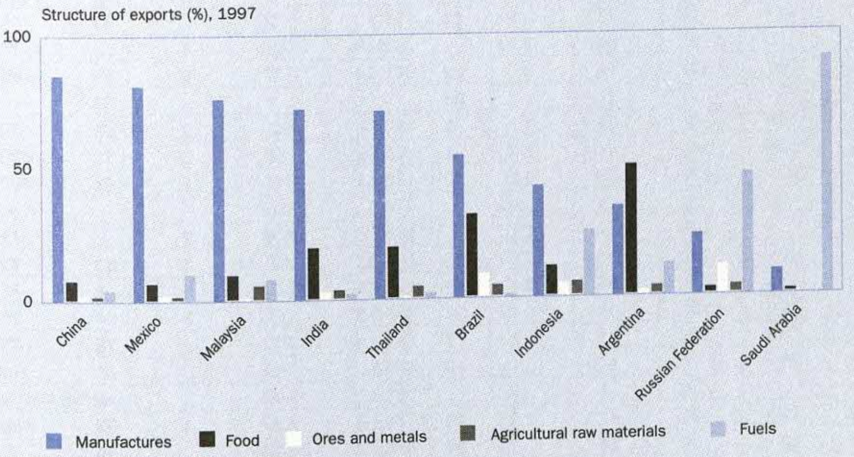
Countries may report trade according to the general or special system of trade (see *Primary data documentation*). Under the general system exports comprise outward-moving goods that are (a) goods wholly or partly produced in the country; (b) foreign goods, neither transformed nor declared for domestic consumption in the country, that move outward from customs storage; and (c) goods previously included as imports for domestic consumption but subsequently exported without transformation. Under the special system exports comprise categories a and c. In some compilations categories b and c are classified as reexports. Because of differences in reporting practices, data on exports may not be fully comparable across economies.

Total exports and the shares of exports by major commodity group were estimated by World Bank staff from the COMTRADE database. Where necessary, data on total exports were supplemented from the IMF's Direction of Trade database. The values of total exports reported here have not been fully reconciled with the estimates of exports of goods and services from the national accounts (shown in table 4.9) or those from the balance of payments (table 4.17).

The classification of commodity groups is based on the Standard International Trade Classification (SITC) revision 1. Most countries now report using later revisions of the SITC or the Harmonized System. Concordance tables are used to convert data reported in one system of nomenclature to another. The conversion process may introduce some errors of classification, but conversions from later to early systems are generally reliable. Shares may not sum to 100 percent because of unclassified trade.

Figure 4.5

A strong trend toward manufactures among the top developing country exporters



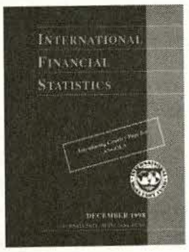
Source: World Bank staff estimates.

Among the top 10 developing country exporters the trend is increasingly toward manufactured exports. Even those that were primarily fuel exporters in 1980, such as Indonesia and Saudi Arabia, are increasing the share of manufactures in their exports.

Definitions

- **Merchandise exports** show the f.o.b. value of goods provided to the rest of the world valued in U.S. dollars. • **Food** comprises the commodities in SITC sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats) and SITC division 22 (oil seeds, oil nuts, and oil kernels). • **Agricultural raw materials** comprise SITC section 2 (crude materials except fuels) excluding divisions 22, 27 (crude fertilizers and minerals excluding coal, petroleum, and precious stones), and 28 (metalliferous ores and scrap). • **Fuels** comprise SITC section 3 (mineral fuels). • **Ores and metals** comprise the commodities in SITC divisions 27, 28, and 68 (nonferrous metals). • **Manufactures** comprise the commodities in SITC sections 5 (chemicals), 6 (basic manufactures), 7 (machinery and transport equipment), and 8 (miscellaneous manufactured goods), excluding division 68.

Data sources



The United Nations Conference on Trade and Development (UNCTAD) publishes data on the structure of exports and imports in its *Handbook of International Trade and Development Statistics.* Estimates of total exports of goods are also published in the IMF's *International Financial Statistics* and *Direction of Trade Statistics* and in the United Nations' *Monthly Bulletin of Statistics.* Tariff-line records of exports and imports are compiled in the United Nations' COMTRADE database.

4.6 Structure of merchandise imports

	Merchandise imports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	..	950	..	27	..	1	..	3	..	1	..	67
Algeria	10,524	8,688	21	32	3	3	2	2	2	1	72	62
Angola	*873*	2,268[a]	*18*	..	*1*	..	*7*	..	*1*	..	*73*	..
Argentina	10,539	30,349	6	5	4	2	10	3	3	2	77	88
Armenia	..	932[a]	..	..	..	..	..	..	..	..	..	..
Australia	19,870	61,243[a]	5	5	3	1	14	6	2	1	75	86
Austria	24,415	62,638	6	*6*	4	*2*	15	*5*	5	*3*	69	*82*
Azerbaijan	..	791[a]	..	..	..	..	..	..	..	..	..	..
Bangladesh	1,980	6,863[a]	24	*17*	6	4	9	*7*	*3*	3	58	*69*
Belarus	..	8,639[a]	..	..	..	..	..	..	..	..	..	..
Belgium[b]	71,192[a]	*151,973*	..	..	..	..	..	..	..	..	..	..
Benin	302	962[a]	26	..	1	..	8	..	1	..	62	..
Bolivia	655	1,866	19	9	1	1	1	8	2	2	78	81
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana[c]	..	..	..	..	..	..	..	..	..	..	..	..
Brazil	24,949	65,074	10	9	1	3	43	12	5	3	41	74
Bulgaria	9,650	3,816[a]	..	..	..	..	..	..	..	..	..	..
Burkina Faso	358	506[a]	20	..	2	..	13	..	1	..	64	..
Burundi	106	100[a]	13	..	2	..	19	..	2	..	61	..
Cambodia	*108*	1,112[a]	*51*	..	*3*	..	*2*	..	*0*	..	*26*	..
Cameroon	1,538	1,296[a]	9	*14*	0	*2*	12	*16*	1	*1*	78	*67*
Canada	57,707	195,039	7	6	2	1	12	4	5	3	72	83
Central African Republic	80	163[a]	21	*12*	1	*14*	2	*8*	2	*1*	75	*61*
Chad	37	141[a]	23	*24*	2	*1*	2	*18*	1	*1*	72	*56*
Chile	5,123	18,111	15	7	2	1	18	10	2	1	60	79
China†	19,501[a]	142,370	..	5	..	5	..	7	..	5	..	77
Hong Kong, China	22,027	208,615	12	6	4	1	6	2	2	2	75	88
Colombia	4,663	15,379	12	11	3	2	12	3	3	2	69	79
Congo, Dem. Rep.	1,117	1,048[a]	9	..	2	..	12	..	1	..	75	..
Congo, Rep.	418	930[a]	19	*21*	1	*1*	14	*20*	2	*1*	65	*58*
Costa Rica	1,596	4,302[a]	9	*13*	2	*1*	15	*9*	2	*2*	68	*72*
Côte d'Ivoire	2,552	3,042	13	*17*	0	*2*	16	*23*	2	*1*	68	*56*
Croatia	..	9,121	..	10	..	2	..	9	..	2	..	72
Cuba	*1,656*	2,642[a]	*32*	..	*1*	..	*11*	..	*2*	..	*53*	..
Czech Republic	..	27,176	..	7	..	2	..	9	..	4	..	79
Denmark	19,315	44,472	11	13	5	3	22	4	3	2	57	75
Dominican Republic	1,426	7,112[a]	17	..	2	..	25	..	2	..	54	..
Ecuador	2,215	4,511	8	9	2	3	1	8	2	2	87	78
Egypt, Arab Rep.	4,860	13,095	32	26	6	6	1	2	1	3	59	63
El Salvador	976	2,961	18	17	2	3	18	11	2	1	61	67
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	4,438	..	16	..	2	..	8	..	2	..	71
Ethiopia[d]	721	1,409[a]	8	*14*	3	*2*	25	*11*	1	*1*	64	*72*
Finland	15,632	30,991	7	7	3	2	29	10	5	6	56	73
France	134,328	266,165	10	10	4	2	27	8	5	3	54	76
Gabon	674	1,155[a]	19	*19*	0	*1*	1	*4*	1	*1*	78	*75*
Gambia, The	169	330[a]	26	..	1	..	9	..	0	..	61	..
Georgia	..	931[a]	..	..	..	..	..	..	..	..	..	..
Germany[e]	185,922	434,861	12	9	4	2	23	8	6	4	52	68
Ghana	1,129	3,295[a]	10	..	1	..	27	..	2	..	59	..
Greece	10,531	25,191	9	15	5	2	23	7	2	3	60	73
Guatemala	1,559	3,852	8	13	2	2	24	11	1	1	65	73
Guinea	299	813[a]	12	..	1	..	19	..	4	..	62	..
Guinea-Bissau	55	116[a]	20	..	0	..	6	..	2	..	69	..
Haiti	536	926[a]	22	..	1	..	13	..	1	..	62	..
Honduras	1,009	2,435	10	18	1	2	16	10	1	1	72	68
† Data for Taiwan, China	19,791	113,837	..	..	..	..	..	..	..	..	..	..

Structure of merchandise imports 4.6

	Merchandise imports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	9,212	21,232	8	5	7	2	16	9	6	3	62	79
India	13,819	36,293 [a]	9	*5*	2	*3*	45	*30*	6	*7*	39	*50*
Indonesia	10,834	41,679	13	9	4	5	16	10	2	3	65	73
Iran, Islamic Rep.	9,330	14,705 [a]	21	..	4	..	1	..	2	..	72	..
Iraq	11,534	765 [a]	13	..	2	..	0	..	1	..	83	..
Ireland	11,133	39,192	12	8	3	1	15	3	2	2	66	79
Israel	8,023	28,880	11	7	3	1	26	8	4	2	57	81
Italy	98,119	204,098	13	11	7	5	28	8	6	4	45	69
Jamaica	1,178	3,183 [a]	20	*15*	1	*2*	38	*15*	2	*1*	39	*65*
Japan	139,892	337,501	12	15	9	5	50	19	10	6	19	55
Jordan	2,394	3,888 [a]	18	*21*	2	*2*	17	*13*	1	*3*	61	*61*
Kazakhstan	..	4,275 [a]	..	..	..	..	..	..	..	..	..	..
Kenya	2,590	3,278	8	17	1	2	34	16	1	2	56	63
Korea, Dem. Rep.	..	1,686 [a]	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	22,228	144,604 [a]	10	*6*	11	*5*	30	*17*	6	*5*	43	*67*
Kuwait	6,554	8,102	15	16	1	1	1	1	1	2	81	81
Kyrgyz Republic	..	709 a	..	*21*	..	*1*	..	*29*	..	*1*	..	*48*
Lao PDR	*85*	409 [a]	*21*	..	*0*	..	*19*	..	*1*	..	*56*	..
Latvia	..	2,721	..	13	..	2	..	14	..	2	..	69
Lebanon	3,132	7,456 [a]	16	..	2	..	15	..	4	..	63	..
Lesotho[c]	..	..	..	..	..	..	..	..	..	..	..	..
Libya	6,776	5,482 [a]	19	..	1	..	1	..	1	..	78	..
Lithuania	..	5,469	..	11	..	3	..	14	..	2	..	68
Macedonia, FYR	..	1,808 [a]	..	..	..	..	..	..	..	..	..	..
Madagascar	676	573	9	15	3	1	15	21	1	0	73	61
Malawi	440	786 [a]	8	*14*	1	*1*	15	*11*	1	*1*	75	*73*
Malaysia	10,735	79,644 [a]	12	*5*	2	*1*	15	*3*	4	*3*	67	*85*
Mali	491	1,126 [a]	19	..	0	..	35	..	0	..	45	..
Mauritania	287	601 [a]	30	..	1	..	14	..	0	..	52	..
Mauritius	619	2,211	26	15	4	3	14	8	1	1	54	74
Mexico	19,591	111,847	16	6	3	2	2	3	4	2	75	83
Moldova	..	1,164 [a]	..	*8*	..	*3*	..	*46*	..	*2*	..	*42*
Mongolia	..	546 [a]	..	*14*	..	*1*	..	*19*	..	*1*	..	*65*
Morocco	4,182	7,877	20	17	6	5	24	17	4	4	47	58
Mozambique	550	1,281 [a]	14	*22*	3	*2*	9	*11*	3	*1*	70	*62*
Myanmar	577	2,739 [a]	6	..	1	..	3	..	2	..	87	..
Namibia[c]	..	..	..	..	..	..	..	..	..	..	..	..
Nepal	226	640	4	14	1	6	18	20	1	5	73	54
Netherlands	76,889	162,155	15	11	3	2	24	9	4	3	53	75
New Zealand	5,515	14,551 [a]	6	*8*	2	*1*	22	*6*	4	*2*	65	*83*
Nicaragua	882	1,470	15	14	1	1	20	12	1	1	63	72
Niger	608	566 [a]	14	..	0	..	26	..	3	..	55	..
Nigeria	13,408	6,734 [a]	15	..	0	..	7	..	2	..	76	..
Norway	16,952	35,751	8	7	3	2	17	3	5	5	67	82
Oman	1,732	4,866	15	17	1	1	11	2	0	2	66	75
Pakistan	5,350	11,182	13	19	3	4	27	20	3	2	54	54
Panama	1,447	2,989	10	10	1	1	31	14	1	1	58	74
Papua New Guinea	958	1,885 [a]	21	..	0	..	15	..	1	..	61	..
Paraguay	615	4,267 [a]	11	*21*	1	*0*	28	*8*	1	*3*	60	*67*
Peru	2,573	8,558	20	14	3	2	2	10	2	1	73	73
Philippines	8,295	38,576	8	8	2	2	28	8	3	2	48	61
Poland	19,089	42,271	14	8	5	2	18	9	6	3	51	77
Portugal	9,293	34,338	14	13	7	3	24	8	4	2	52	74
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	13,201	11,270	..	6	..	2	..	19	..	3	..	68
Russian Federation	..	67,619 [a]	..	19	..	1	..	3	..	2	..	46

4.6 Structure of merchandise imports

	Merchandise imports		Food		Agricultural raw materials		Fuels		Ores and metals		Manufactures	
	$ millions		% of total		% of total		% of total		% of total		% of total	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Rwanda	155	368[a]	10	..	3	..	13	..	0	..	72	..
Saudi Arabia	29,957	40,837[a]	14	*18*	1	*1*	1	*0*	1	*4*	82	*76*
Senegal	1,038	1,161[a]	25	*32*	1	*2*	25	*10*	0	*2*	48	*53*
Sierra Leone	268	239[a]	24	..	1	..	2	..	1	..	71	..
Singapore	24,003	131,651	8	4	6	1	29	10	2	2	54	82
Slovak Republic	..	10,259	..	8	..	2	..	12	..	3	..	67
Slovenia	..	9,358	..	7	..	3	..	8	..	4	..	76
South Africa[f]	18,551	31,020[a]	3	*6*	3	*2*	0	*10*	2	*1*	62	*72*
Spain	33,901	118,478[a]	13	*12*	5	*3*	39	*9*	6	*3*	38	*72*
Sri Lanka	2,035	5,517[a]	20	..	1	..	24	..	2	..	52	..
Sudan	1,499	1,493[a]	26	*17*	1	*2*	13	*19*	1	*0*	60	*60*
Sweden	33,426	62,854	7	7	2	2	24	7	5	3	62	79
Switzerland	36,148	75,747	8	6	3	2	11	5	7	4	71	84
Syrian Arab Republic	4,124	5,929[a]	14	*17*	3	*3*	26	*1*	2	*1*	55	*76*
Tajikistan	..	633[a]	..	..	..	..	..	..	..	..	..	..
Tanzania	1,211	1,958[a]	13	..	1	..	21	..	2	..	63	..
Thailand	9,450	62,084	5	5	3	3	30	9	4	3	51	78
Togo	550	1,056[a]	17	..	1	..	23	..	0	..	59	..
Trinidad and Tobago	3,178	3,028	11	10	2	1	38	13	1	3	49	72
Tunisia	3,509	7,932	14	11	4	3	21	8	4	3	58	75
Turkey	7,573	48,585	4	5	2	5	48	10	3	5	43	72
Turkmenistan	..	1,201[a]	..	..	..	..	..	..	..	..	..	..
Uganda	417	825[a]	11	..	1	..	23	..	0	..	65	..
Ukraine	..	26,902[a]	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	8,098	31,050[a]	11	..	1	..	11	..	2	..	74	..
United Kingdom	117,632	305,074	13	9	4	2	13	4	7	3	61	81
United States	250,280	894,995	8	5	3	2	33	9	5	2	50	78
Uruguay	1,652	3,716	8	10	4	3	29	9	3	1	56	76
Uzbekistan	..	4,842[a]	..	..	..	..	..	..	..	..	..	..
Venezuela	10,669	16,214[a]	14	*16*	3	*3*	2	*1*	2	*3*	79	*77*
Vietnam	618	14,814[a]	37	..	2	..	5	..	0	..	55	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	1,853	1,807[a]	28	*29*	0	*2*	7	*8*	1	*1*	63	*59*
Yugoslavia, FR (Serb./Mont.)	..	*4,798*	..	*14*	..	*4*	..	*16*	..	*6*	..	*59*
Zambia	1,100	1,070[a]	5	..	1	..	22	..	1	..	71	..
Zimbabwe	193	3,090	6	7	2	2	12	10	1	2	73	77
World	**1,866,891 t**	**5,372,168 t**	**11 w**	**9 w**	**4 w**	**2 w**	**25 w**	**8 w**	**5 w**	**3 w**	**54 w**	**75 w**
Low income	..	..	15	..	2	..	25	..	3	..	55	..
Middle income	..	1,160,963	12	9	3	3	19	8	3	3	60	73
Lower middle income	..	549,828	..	10	..	4	..	8	..	3	..	70
Upper middle income	210,421	602,676	11	*9*	2	*2*	18	*8*	4	*3*	62	*77*
Low & middle income	..	1,288,360	12	*10*	3	*3*	20	*8*	3	*3*	60	*72*
East Asia & Pacific	..	380,545	..	6	..	4	..	8	..	4	..	75
Europe & Central Asia	..	..	..	11	..	2	..	8	..	3	..	66
Latin America & Carib.	99,026	319,219	13	9	2	2	19	7	3	2	63	79
Middle East & N. Africa	92,498	132,309	19	*20*	3	*3*	9	*5*	2	*3*	67	*68*
South Asia	..	60,715	12	*9*	2	*4*	35	*25*	4	*5*	46	*54*
Sub-Saharan Africa	..	..	10	..	2	..	9	..	2	..	64	..
High income	1,429,590	4,098,767	11	8	4	2	26	8	5	3	52	75
Europe EMU	589,631	1,352,916	12	10	4	3	25	8	5	4	52	72

a. Data are from IMF, *Direction of Trade Statistics*. b. Includes Luxembourg. c. Included with South Africa d. Data prior to 1992 include Eritrea. e. Data prior to 1990 refer to the Federal Republic of Germany before unification. f. Data are for the South African Customs Union, which comprises Botswana, Lesotho, Namibia, and South Africa.

Structure of merchandise imports 4.6

About the data

Data on imports of goods are derived from the same sources as data on exports. In principle, world exports and imports should be identical. Similarly, exports from an economy should equal the sum of imports by the rest of the world from that economy. But differences in timing and definitions result in discrepancies in reported values at all levels. For further discussion of indicators of merchandise trade see *About the data* for tables 4.4 and 4.5.

The value of imports is generally recorded as the cost of the goods when purchased by the importer plus the cost of transport and insurance to the frontier of the importing country—the c.i.f. (cost, insurance, and freight) value. A few countries, including Australia, Canada, and the United States, collect import data on an f.o.b. (free on board) basis and adjust them for freight and insurance costs. Many countries collect and report trade data in U.S. dollars. When countries report in local currency, the United Nations Statistical Division applies the average official exchange rate for the period shown.

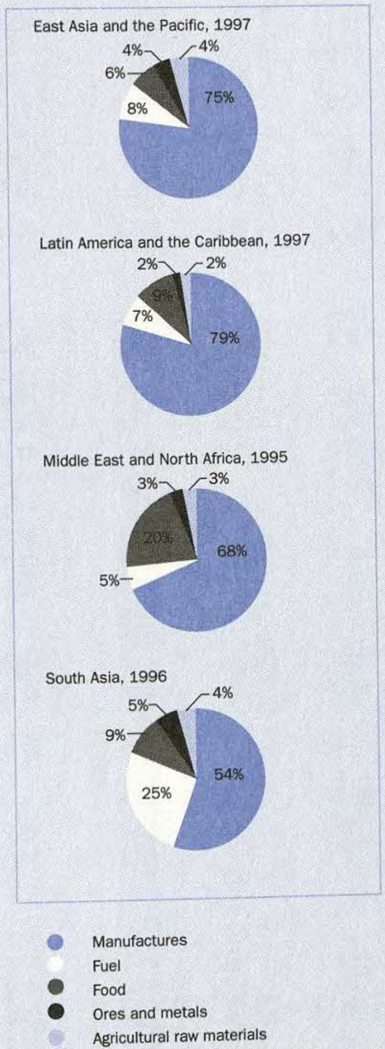
Countries may report trade according to the general or special system of trade (see *Primary data documentation*). Under the general system imports include goods imported for domestic consumption and imports into bonded warehouses and free trade zones. Under the special system imports comprise goods imported for domestic consumption (including transformation and repair) and withdrawals for domestic consumption from bonded warehouses and free trade zones. Goods transported through a country en route to another are excluded.

Total imports and the shares of imports by major commodity groups were estimated by World Bank staff from the COMTRADE database. Where necessary, data on total imports were supplemented from the International Monetary Fund's (IMF) Direction of Trade database. The values of total imports reported here have not been fully reconciled with the estimates of imports of goods and services from the national accounts (shown in table 4.9) or those from the balance of payments (table 4.17).

The classification of commodity groups is based on the Standard International Trade Classification (SITC) revision 1. Most countries now report using later revisions of the SITC or the Harmonized System. Concordance tables are used to convert data reported in one system of nomenclature to another. The conversion process may introduce some errors of classification, but conversions from later to early systems are generally reliable. Shares may not sum to 100 percent because of unclassified trade.

Figure 4.6

The structure of imports looks much the same across regions



Note: Shares do not add to 100 percent because of rounding.

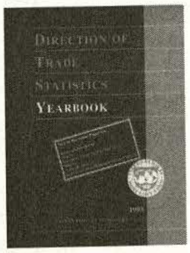
Source: World Bank staff estimates.

Because manufactured goods dominate world trade, the structure of imports (and exports) tends to look similar across regions. The exceptions are the large share of fuel in South Asia's imports, and the large share of food in those of the Middle East and North Africa.

Definitions

- **Merchandise imports** show the c.i.f. value of goods purchased from the rest of the world valued in U.S. dollars. • **Food** comprises the commodities in SITC sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats) and SITC division 22 (oil seeds, oil nuts, and oil kernels). • **Agricultural raw materials** comprise SITC section 2 (crude materials except fuels) excluding divisions 22, 27 (crude fertilizers and minerals excluding coal, petroleum, and precious stones), and 28 (metalliferous ores and scrap). • **Fuels** comprise SITC section 3 (mineral fuels). • **Ores and metals** comprise the commodities in SITC divisions 27, 28, and 68 (nonferrous metals). • **Manufactures** comprise the commodities in SITC sections 5 (chemicals), 6 (basic manufactures), 7 (machinery and transport equipment), and 8 (miscellaneous manufactured goods), excluding division 68.

Data sources



The United Nations Conference on Trade and Development publishes data on the structure of exports and imports in its *Handbook of International Trade and Development Statistics.* Estimates of total imports of goods are also published in the IMF's *International Financial Statistics* and *Direction of Trade Statistics* and in the United Nations' *Monthly Bulletin of Statistics.* Tariff-line records of exports and imports are compiled in the United Nations' COMTRADE database.

4.7 Structure of service exports

	Service exports		Transport		Travel		Communications, computer, information, and other services		Insurance and financial services	
	$ millions		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	11	64	42.1	19.1	6.4	42.5	46.8	36.3	4.7	2.0
Algeria	476	..	41.0	..	24.1	..	29.5	..	5.4	..
Angola	..	*268*	..	*30.4*	..	*0.6*	..	*60.7*	..	*8.3*
Argentina	1,876	3,271	42.9	40.0	18.3	43.4	38.4	14.2	0.3	2.5
Armenia	..	97	..	52.4	..	20.2	..	24.3	..	3.1
Australia	3,862	18,838	49.3	26.7	29.4	48.2	20.0	19.7	1.3	5.5
Austria	9,423	26,697	7.3	15.3	68.9	41.5	21.3	38.6	2.6	4.7
Azerbaijan	..	*186*	..	..	..	..	..	..	..	..
Bangladesh	163	678	18.5	13.2	7.5	9.1	74.0	75.9	..	1.9
Belarus	..	923	..	..	..	..	..	..	..	..
Belgium[a]	12,925	34,855	..	..	..	..	..	..	..	..
Benin	62	..	56.8	..	14.1	..	26.8	..	2.3	..
Bolivia	88	195	33.5	40.2	41.0	33.7	16.6	16.3	8.9	9.8
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	101	*163*	41.7	*24.6*	22.2	*57.2*	32.0	*17.3*	4.1	*0.8*
Brazil	1,737	7,266	46.8	27.0	7.3	14.7	38.1	52.6	7.9	5.7
Bulgaria	1,211	1,338	36.3	33.6	28.7	27.5	31.0	31.5	4.0	7.5
Burkina Faso	49	..	17.3	..	10.2	..	72.5	..	..	..
Burundi	..	9	..	18.9	..	7.1	..	70.2	..	3.8
Cambodia	..	160	..	31.4	..	42.5	..	26.1	..	..
Cameroon	374	475	48.4	*38.5*	15.5	*11.8*	30.9	*44.0*	5.2	*5.7*
Canada	7,445	30,018	34.1	20.0	34.2	29.2	31.7	50.8	..	..
Central African Republic	54	..	6.5	..	5.1	..	86.1	..	2.4	..
Chad	0	..	..	..	100.0	..	..	..	..	..
Chile	1,263	3,685	32.2	37.8	13.9	28.2	51.9	30.7	2.1	3.4
China	*2,512*	24,581	*52.3*	12.1	*28.0*	49.1	*11.7*	38.0	*8.0*	0.8
Hong Kong, China	5,794	41,056	..	..	..	..	..	..	..	..
Colombia	1,342	4,180	31.1	39.0	35.6	22.8	27.6	24.8	5.6	13.3
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	111	56	46.0	46.2	6.7	4.6	42.7	49.2	4.6	..
Costa Rica	194	1,524	24.9	14.9	43.7	48.6	30.7	36.5	0.7	..
Côte d'Ivoire	564	744	50.0	25.9	14.4	14.9	25.7	59.2	9.9	..
Croatia	..	3,994	..	16.6	..	63.3	..	20.0	..	..
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	7,132	..	18.5	..	50.8	..	27.6	..	3.1
Denmark	*5,853*	15,146	*44.4*	45.0	*21.1*	20.8	*31.8*	34.2	*2.7*	..
Dominican Republic	309	*2,132*	7.8	*1.7*	55.8	*86.4*	35.9	*11.9*	0.5	..
Ecuador	367	736	35.1	40.5	35.6	39.4	13.3	9.6	16.0	10.5
Egypt, Arab Rep.	2,393	11,241	52.4	26.9	24.8	39.7	22.4	32.5	0.4	0.9
El Salvador	139	292	18.3	16.1	9.6	34.9	50.5	43.4	21.6	5.5
Eritrea	..	148	..	..	..	..	..	..	..	..
Estonia	..	1,318	..	49.9	..	35.9	..	13.1	..	1.0
Ethiopia[b]	110	413	53.2	54.1	5.7	5.7	40.9	39.0	0.2	1.2
Finland	2,733	7,168	35.1	27.3	25.0	26.5	37.0	47.5	2.9	–1.3
France	43,506	81,144	24.2	23.8	19.0	34.4	53.4	38.0	3.4	3.8
Gabon	325	*273*	21.5	*35.2*	5.2	*2.6*	67.7	*56.2*	5.6	*6.0*
Gambia, The	18	109	..	8.1	100.0	68.8	..	22.9	..	0.1
Georgia	..	160	..	..	..	..	..	..	..	..
Germany[c]	33,062	79,904	26.6	23.6	15.1	20.6	57.4	50.2	0.8	5.6
Ghana	107	*157*	33.6	*53.1*	0.4	*8.1*	64.9	*36.0*	1.2	*2.9*
Greece	3,947	9,287	23.6	1.9	43.9	40.6	32.4	57.2	0.1	0.3
Guatemala	211	589	18.9	13.0	29.2	45.2	46.5	39.6	5.4	2.1
Guinea	..	111	..	42.9	..	0.1	..	55.8	..	1.2
Guinea-Bissau	*6*	..	*8.9*	..	*12.5*	..	*78.6*	..	..	..
Haiti	90	*109*	5.9	*5.5*	85.0	*87.6*	7.8	*6.9*	1.2	..
Honduras	82	335	36.9	19.7	30.1	43.5	18.5	34.6	14.5	2.2

Structure of service exports 4.7

	Service exports $ millions		Transport % of total		Travel % of total		Communications, computer, information, and other services % of total		Insurance and financial services % of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	*633*	4,874	*5.4*	10.3	*63.5*	53.1	*30.5*	30.0	*0.6*	6.6
India	2,949	9,253	15.0	21.7	52.2	32.6	31.5	43.1	1.2	2.6
Indonesia	*449*	6,941	*15.1*	0.0	*50.8*	95.8	*34.1*	4.2	..	..
Iran, Islamic Rep.	731	*860*	4.5	*50.5*	4.0	*2.2*	91.5	*35.8*	..	*11.5*
Iraq	..	..	..	..	..	..	..	..	..	..
Ireland	1,381	6,159	36.6	18.7	42.0	41.9	21.4	39.5	..	..
Israel	2,722	8,426	38.1	24.6	36.0	34.5	24.9	40.5	1.0	0.3
Italy	19,192	72,310	23.9	22.1	46.7	41.1	22.9	28.8	6.5	8.0
Jamaica	401	1,478	28.0	16.1	61.2	76.5	6.7	7.1	4.2	0.3
Japan	20,240	69,302	62.9	31.5	3.2	6.2	32.4	59.1	1.6	3.2
Jordan	750	1,937	27.0	22.5	51.9	44.6	21.1	32.7	..	0.2
Kazakhstan	..	842	..	..	..	..	..	..	..	..
Kenya	577	944	38.0	35.4	41.4	40.8	19.8	22.2	0.8	1.6
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	2,570	26,301	60.1	41.8	14.4	18.0	23.6	39.6	1.9	0.6
Kuwait	1,225	1,764	57.7	69.3	30.8	10.7	11.5	16.1	..	3.9
Kyrgyz Republic	..	45	..	..	..	..	..	..	..	..
Lao PDR	..	100	..	17.6	..	53.8	..	28.1	..	0.4
Latvia	..	1,033	..	69.3	..	18.6	..	8.2	..	3.9
Lebanon	..	776	..	..	..	..	..	..	..	..
Lesotho	32	..	2.0	..	37.8	..	60.2	..	..	..
Libya	164	..	64.5	..	6.2	..	29.4	..	..	..
Lithuania	..	1,032	..	42.9	..	34.8	..	20.0	..	2.3
Macedonia, FYR	..	128	..	42.3	..	10.9	..	44.5	..	2.3
Madagascar	79	*293*	49.4	*27.1*	6.3	*22.1*	44.0	*49.2*	0.4	*1.6*
Malawi	32	..	49.8	..	29.5	..	19.8	..	0.9	..
Malaysia	1,135	15,016	41.6	20.0	28.0	24.9	29.8	55.1	0.6	0.0
Mali	58	82	30.9	27.8	25.8	32.2	42.2	36.1	1.0	4.0
Mauritania	56	28	26.3	*6.3*	11.9	*40.1*	61.8	*53.6*	0.0	..
Mauritius	140	919	38.4	24.0	30.2	53.3	31.2	22.6	0.2	0.0
Mexico	4,591	11,400	9.7	12.4	69.7	66.6	10.4	17.9	10.2	3.1
Moldova	..	132	..	45.3	..	29.3	..	24.3	..	1.1
Mongolia	*37*	*57*	*26.5*	*26.2*	*8.6*	*36.0*	*64.9*	*33.5*	..	*4.4*
Morocco	783	2,471	20.3	17.8	57.9	58.5	20.7	22.4	1.1	1.2
Mozambique	118	253	78.5	*23.3*	0.0	..	21.5	76.7	..	..
Myanmar	60	509	34.5	..	19.7	..	43.6	..	2.3	..
Namibia	..	367	..	..	..	91.7	..	7.5	..	0.8
Nepal	127	898	5.9	6.3	40.8	16.8	53.3	76.8	..	..
Netherlands	17,150	49,774	51.5	39.9	13.1	12.5	34.3	46.3	1.2	1.3
New Zealand	1,009	3,977	58.2	29.1	21.1	52.6	19.6	18.3	1.1	–0.1
Nicaragua	44	155	36.0	15.7	48.6	49.7	14.9	32.8	0.5	1.8
Niger	41	*33*	33.5	*1.2*	15.2	*21.3*	50.9	*77.5*	0.4	*0.0*
Nigeria	1,127	786	80.9	11.5	6.0	7.0	6.5	81.0	6.6	0.4
Norway	8,615	14,447	74.5	62.4	8.8	14.5	16.3	19.9	0.4	3.1
Oman	9	18	100.0	100.0	..	..	..	..	..	..
Pakistan	617	1,761	41.3	50.1	22.8	6.3	34.1	41.2	1.8	2.5
Panama	902	1,600	47.0	49.4	19.0	23.4	25.8	21.1	8.2	6.1
Papua New Guinea	43	*436*	33.8	*7.7*	28.3	*3.1*	36.9	*86.0*	1.0	*3.1*
Paraguay	118	576	2.0	..	55.3	..	42.6	..	0.2	..
Peru	715	1,543	30.9	19.2	40.9	53.5	24.9	20.0	3.2	7.4
Philippines	1,447	15,137	14.2	2.4	22.1	15.5	63.6	82.0	..	0.2
Poland	2,018	8,986	59.2	34.6	11.9	25.6	24.1	29.5	4.8	10.3
Portugal	2,006	7,593	23.5	17.5	57.3	60.0	18.1	18.2	1.2	4.3
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	1,063	1,422	37.6	34.2	30.5	37.0	27.8	23.5	4.2	5.3
Russian Federation	..	13,520	..	25.5	..	51.6	..	22.1	..	0.9

4.7 Structure of service exports

	Service exports		Transport		Travel		Communications, computer, information, and other services		Insurance and financial services	
	$ millions		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	32	58	42.3	28.7	10.8	28.8	46.3	42.6	0.6	..
Saudi Arabia	5,191	4,484	15.3	0.0	25.9	0.0	58.8	100.0	..	..
Senegal	337	*556*	19.1	*10.1*	29.3	*30.2*	51.3	*59.3*	0.3	*0.4*
Sierra Leone	49	*87*	31.4	*11.2*	25.5	*65.8*	43.1	*22.7*	..	*0.2*
Singapore	4,856	30,472	26.9	16.9	29.5	20.9	42.5	60.7	1.1	1.5
Slovak Republic	..	2,167	..	34.1	..	25.1	..	35.9	..	4.8
Slovenia	..	2,043	..	22.8	..	58.1	..	18.5	..	0.6
South Africa	2,929	5,066	41.8	24.0	47.1	56.5	2.5	10.3	8.6	9.1
Spain	11,593	43,902	25.9	15.5	60.0	60.9	11.6	19.9	2.4	3.6
Sri Lanka	231	875	18.8	44.4	42.9	23.8	37.4	28.3	1.0	3.4
Sudan	213	33	9.2	3.5	17.9	13.7	72.4	82.9	0.5	..
Sweden	7,489	17,848	40.5	32.1	12.9	20.0	44.0	45.9	2.6	2.0
Switzerland	6,888	*26,225*	18.8	*9.4*	46.0	*34.2*	30.5	*26.9*	4.7	*29.5*
Syrian Arab Republic	365	1,604	17.2	13.3	42.9	64.5	39.9	22.1	..	..
Tajikistan	..	2	..	..	..	..	..	..	..	..
Tanzania	165	484	39.5	12.3	12.6	70.1	46.4	14.8	1.5	2.8
Thailand	1,490	15,763	20.1	15.3	58.2	48.6	21.2	35.6	0.5	0.5
Togo	74	..	38.3	..	35.2	..	25.0	..	1.4	..
Trinidad and Tobago	411	*343*	27.7	*56.6*	37.3	*22.6*	35.0	*12.0*	..	*8.9*
Tunisia	1,067	2,522	19.4	25.5	64.1	61.2	14.8	10.9	1.6	2.4
Turkey	711	19,373	37.4	11.3	45.9	36.1	16.3	50.5	0.4	2.0
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uganda	10	154	..	13.2	40.4	82.0	59.6	4.8	..	..
Ukraine	..	4,937	..	81.6	..	5.5	..	12.3	..	0.7
United Arab Emirates	..	..	..	..	..	..	..	..	..	..
United Kingdom	36,452	87,239	38.9	21.0	19.0	23.7	42.1	40.9	..	14.4
United States	47,550	256,163	29.9	18.7	22.3	32.9	44.6	43.2	3.2	5.3
Uruguay	468	1,475	18.6	28.4	63.7	51.5	14.8	13.8	2.9	6.3
Uzbekistan	..	285	..	..	..	..	..	..	..	..
Venezuela	693	1,415	41.1	23.7	35.1	61.4	9.5	14.7	14.4	0.1
Vietnam	..	2,530	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	260	..	16.4	..	32.3	..	51.2	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	152	..	56.8	..	13.9	..	25.3	..	4.1	..
Zimbabwe	169	..	56.9	..	14.6	..	26.1	..	2.4	..
World	**392,155 t**	**1,371,883 t**	**33.6 w**	**23.2 w**	**26.2 w**	**31.7 w**	**37.8 w**	**40.7 w**	**2.9 w**	**5.0 w**
Low income	9,757	25,593	35.4	24.6	29.9	28.1	32.1	45.3	2.9	2.3
Middle income	54,746	242,215	29.6	20.3	36.4	41.4	30.3	36.0	4.9	2.6
Lower middle income	*25,880*	131,509	29.7	20.3	36.7	43.9	30.9	34.3	3.4	1.7
Upper middle income	30,501	110,606	29.5	20.2	36.1	38.5	29.8	37.9	6.0	3.8
Low & middle income	64,991	267,755	30.6	20.6	35.2	40.4	30.6	36.7	4.5	2.6
East Asia & Pacific	*8,774*	82,484	23.9	11.3	38.0	41.9	37.7	46.4	0.6	0.4
Europe & Central Asia	..	74,951	46.0	26.5	24.7	38.9	25.5	31.3	3.9	3.5
Latin America & Carib.	16,777	47,034	27.4	25.7	40.9	43.2	25.2	26.3	6.7	5.0
Middle East & N. Africa	14,875	34,369	25.1	19.8	33.0	39.3	41.4	40.0	..	1.2
South Asia	4,177	13,805	19.6	25.0	44.4	27.8	35.1	44.8	1.4	2.5
Sub-Saharan Africa	9,152	15,159	45.0	25.3	27.6	46.9	22.1	24.0	5.6	5.4
High income	327,151	1,104,142	34.1	23.9	24.7	29.6	39.0	41.7	2.6	5.6
Europe EMU	152,970	409,507	27.4	23.8	28.8	33.9	41.1	37.7	2.8	4.6

a. Includes Luxembourg. b. Data prior to 1992 include Eritrea. c. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Structure of service exports 4.7

About the data

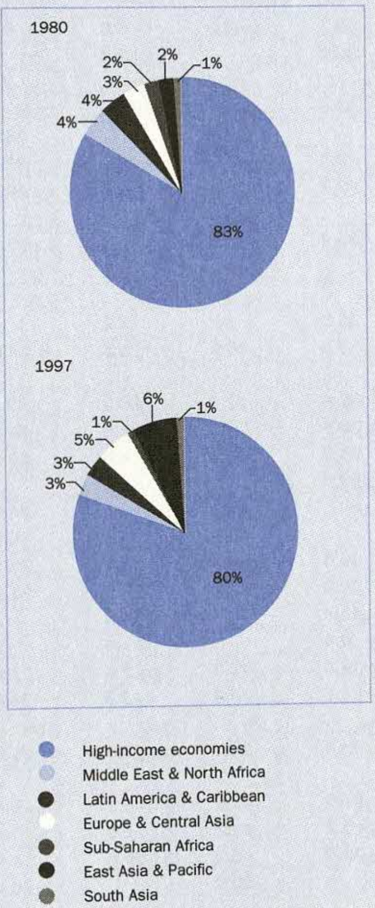
Balance of payments statistics, the main source of information for international trade in services, have many weaknesses. Until recently some large economies—such as the former Soviet Union—did not report data on trade in services. Disaggregation of important components may be limited and varies significantly across countries. There are inconsistencies in the methods used to report items. And the recording of major flows as net items is common (for example, insurance transactions are often recorded as premiums less claims). These factors contribute to a downward bias in the value of the service trade reported in the balance of payments.

Efforts are being made to improve the coverage, quality, and consistency of these data. Eurostat and the Organisation for Economic Co-operation and Development, for example, are working together to improve the collection of statistics on trade in services in member countries. In addition, the International Monetary Fund (IMF) has implemented the new classification of trade in services introduced in the fifth edition of its *Balance of Payments Manual* (1993).

Still, difficulties in capturing all the dimensions of international trade in services mean that the record is likely to remain incomplete. Cross-border intrafirm service transactions, which are usually not captured in the balance of payments, are increasing rapidly as foreign direct investment expands and electronic networks become pervasive. One example of such transactions is transnational corporations' use of mainframe computers around the clock for data processing, exploiting time zone differences between their home country and the host countries of their affiliates. Another important dimension of services trade not captured by conventional balance of payments statistics is establishment trade—sales in the host country by foreign affiliates. By contrast, cross-border intrafirm transactions in merchandise may be reported as exports or imports in the balance of payments.

Figure 4.7

Developing countries are garnering a growing share of service exports



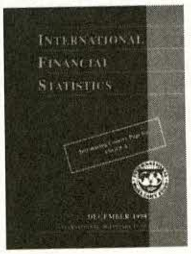
Source: International Monetary Fund, Balance of Payments data files.

Developing countries' share of service exports has grown, with the largest gains in East Asia and the Pacific and Europe and Central Asia.

Definitions

- **Service exports** refer to economic output of intangible commodities that may be produced, transferred, and consumed at the same time. International transactions in services are defined by the IMF's *Balance of Payments Manual* (1993), but definitions may nevertheless vary among reporting economies. • **Transport** covers all transport services (sea, air, land, internal waterway, space, and pipeline) performed by residents of one economy for those of another and involving the carriage of passengers, movement of goods (freight), rental of carriers with crew, and related support and auxiliary services. Excluded are freight insurance, which is included in insurance services; goods procured in ports by nonresident carriers and repairs of transport equipment, which are included in goods; repairs of railway facilities, harbors, and airfield facilities, which are included in construction services; and rental of carriers without crew, which is included in other services. • **Travel** covers goods and services acquired from an economy by travelers in that economy for their own use during visits of less than one year for business or personal purposes. • **Communications, computer, information, and other services** cover international telecommunications and postal and courier services; computer data; news-related service transactions between residents and nonresidents; construction services; royalties and license fees; miscellaneous business, professional, and technical services; personal, cultural, and recreational services; and government services not included elsewhere. • **Insurance and financial services** cover various types of insurance provided to nonresidents by resident insurance enterprises and vice versa, and financial intermediary and auxiliary services (except those of insurance enterprises and pension funds) exchanged between residents and nonresidents.

Data sources



Data on exports and imports of services come from the IMF's balance of payments data files. The IMF publishes balance of payments data in its *International Financial Statistics* and *Balance of Payments Statistics Yearbook.*

4.8 Structure of service imports

	Service imports		Transport		Travel		Communications, computer, information, and other services		Insurance and financial services	
	$ millions		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	18	115	43.7	48.0	0.0	4.2	51.4	29.3	4.9	18.5
Algeria	2,697	..	39.9	..	12.4	..	40.9	..	6.8	..
Angola	..	*2,423*	..	*12.8*	..	*3.0*	..	*82.1*	..	*2.0*
Argentina	3,788	6,340	33.6	45.2	47.3	39.6	19.1	12.2	..	3.2
Armenia	..	159	..	57.6	..	26.0	..	8.9	..	7.5
Australia	6,549	18,823	47.3	34.3	28.0	32.6	23.1	27.1	1.6	5.9
Austria	6,204	24,942	12.7	11.7	50.6	40.6	32.4	42.2	4.2	5.5
Azerbaijan	..	*399*	..	..	..	..	..	..	..	..
Bangladesh	173	557	64.3	66.2	3.3	13.9	26.4	11.9	6.0	8.0
Belarus	..	385	..	..	..	..	..	..	..	..
Belgium[a]	12,827	31,866	..	..	..	..	..	..	..	..
Benin	109	..	56.9	..	7.1	..	25.9	..	10.1	..
Bolivia	259	406	53.3	60.6	21.3	14.0	16.2	15.8	9.1	9.5
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	216	*344*	42.4	*52.4*	26.0	*22.6*	27.8	*20.8*	3.7	*4.2*
Brazil	4,871	18,463	56.5	35.1	7.5	29.5	35.0	33.6	1.0	1.8
Bulgaria	549	1,167	51.3	42.8	8.6	19.0	34.4	29.1	5.7	9.0
Burkina Faso	209	..	58.0	..	15.3	..	21.9	..	4.8	..
Burundi	..	41	..	48.0	..	24.5	..	25.1	..	2.3
Cambodia	..	188	..	49.0	..	6.8	..	39.9	..	4.3
Cameroon	377	694	39.0	*34.4*	11.5	*21.1*	44.1	*37.5*	5.4	*7.0*
Canada	10,666	36,361	29.9	22.9	30.9	31.1	39.2	46.0	..	..
Central African Republic	142	..	47.3	..	24.5	..	23.5	..	4.7	..
Chad	24	..	6.4	..	57.5	..	35.4	..	0.7	..
Chile	1,583	4,000	52.4	49.6	12.6	21.6	32.3	25.3	2.7	3.5
China	*2,024*	30,306	*61.6*	33.8	*3.3*	33.5	*30.7*	28.1	*4.4*	4.5
Hong Kong, China	4,372	..	..	..	..	..	..	..	..	..
Colombia	1,170	4,375	45.3	29.3	20.5	21.9	24.0	32.1	10.2	16.7
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	480	565	27.0	42.0	6.1	9.1	63.5	45.6	3.5	3.3
Costa Rica	286	1,152	58.2	41.8	21.1	29.0	13.9	23.7	6.7	5.4
Côte d'Ivoire	1,531	1,316	38.6	45.2	15.8	14.1	37.7	40.7	7.9	..
Croatia	..	1,972	..	20.2	..	26.4	..	53.3	..	..
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	5,389	..	11.7	..	43.7	..	39.5	..	5.1
Denmark	*4,663*	14,990	*47.7*	45.0	*27.4*	27.5	*22.9*	27.5	*2.0*	..
Dominican Republic	399	*962*	39.6	*56.8*	41.6	*21.1*	14.7	*9.9*	4.1	*12.2*
Ecuador	704	1,121	36.0	51.2	32.4	20.2	19.1	12.2	12.4	16.3
Egypt, Arab Rep.	2,343	5,048	40.3	28.2	7.2	19.9	49.1	49.0	3.4	2.9
El Salvador	273	364	29.3	57.1	38.8	20.5	20.7	11.8	11.2	10.7
Eritrea	..	93	..	..	..	..	..	..	..	..
Estonia	..	727	..	46.8	..	16.5	..	33.3	..	3.4
Ethiopia[b]	90	280	72.2	55.6	2.2	10.1	25.6	29.0	..	5.3
Finland	2,555	8,377	39.4	23.0	23.1	26.2	35.1	49.4	2.4	1.4
France	32,148	63,651	28.4	30.9	18.7	25.9	48.1	38.8	4.8	4.4
Gabon	789	*949*	22.0	*29.6*	12.2	*18.3*	60.1	*48.3*	5.7	*3.8*
Gambia, The	42	75	55.8	44.7	3.5	22.0	33.2	28.7	7.4	4.6
Georgia	..	245	..	..	..	..	..	..	..	..
Germany[c]	42,378	119,507	25.1	19.3	41.2	38.5	33.2	39.6	0.6	2.6
Ghana	270	*456*	39.7	*47.0*	12.1	*4.9*	45.8	*41.1*	2.3	*7.0*
Greece	1,428	4,650	41.5	26.2	21.6	28.5	31.1	40.7	5.8	4.5
Guatemala	487	650	37.0	50.4	33.6	18.2	26.0	24.8	3.3	6.5
Guinea	..	322	..	38.7	..	7.2	..	52.0	..	2.1
Guinea-Bissau	*14*	*21*	*47.9*	*52.6*	*11.0*	..	*36.0*	*41.5*	*5.0*	*5.8*
Haiti	162	*283*	49.3	*66.8*	25.1	*13.1*	23.0	*20.1*	2.7	..
Honduras	174	361	53.3	59.7	17.8	17.2	16.6	21.1	12.3	1.9

Structure of service imports 4.8

	Service imports		Transport		Travel		Communications, computer, information, and other services		Insurance and financial services	
	$ millions		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	*524*	3,695	*60.3*	11.5	*26.9*	31.2	*6.1*	47.9	*6.7*	9.3
India	1,516	8,110	60.0	54.8	3.8	10.8	31.0	29.2	5.3	5.2
Indonesia	*4,998*	16,607	*40.1*	32.5	*11.9*	14.5	*44.2*	49.9	*3.8*	3.1
Iran, Islamic Rep.	5,223	*3,083*	43.6	*46.5*	32.5	*8.4*	17.4	*35.4*	6.4	*9.8*
Iraq	..	..	..	..	..	..	..	..	..	..
Ireland	1,593	15,069	43.9	13.4	36.6	14.7	16.1	70.7	3.4	1.2
Israel	2,310	11,068	44.1	34.5	35.6	36.4	18.5	26.5	1.8	2.6
Italy	16,249	70,429	43.8	35.2	11.8	23.6	31.3	31.5	13.1	9.6
Jamaica	370	1,175	55.4	44.6	8.9	15.4	23.8	33.1	11.8	6.8
Japan	32,360	123,454	52.2	25.2	14.2	26.7	31.3	44.2	2.3	3.8
Jordan	819	1,698	32.8	44.6	33.1	25.9	28.1	24.2	6.0	5.3
Kazakhstan	..	1,125	..	..	..	..	..	..	..	..
Kenya	502	837	66.2	43.7	4.6	23.2	18.0	22.9	11.2	10.3
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	3,293	29,502	61.3	34.9	10.6	23.7	27.6	40.6	0.5	0.8
Kuwait	3,067	5,238	38.8	31.3	43.7	48.8	16.9	18.6	0.6	1.3
Kyrgyz Republic	..	171	..	..	..	..	..	..	..	..
Lao PDR	..	116	..	34.8	..	18.2	..	42.8	..	4.2
Latvia	..	662	..	30.4	..	49.2	..	17.3	..	3.2
Lebanon	..	574	..	..	..	..	..	..	..	..
Lesotho	50	..	31.6	..	15.8	..	49.7	..	2.8	..
Libya	2,303	..	51.4	..	20.4	..	23.2	..	5.0	..
Lithuania	..	897	..	40.1	..	30.9	..	26.3	..	2.7
Macedonia, FYR	..	273	..	48.3	..	9.8	..	25.0	..	17.0
Madagascar	311	*373*	57.3	*46.7*	9.9	*19.3*	28.0	*33.2*	4.8	*0.8*
Malawi	179	..	81.7	..	5.6	..	5.3	..	7.4	..
Malaysia	2,957	17,516	44.3	31.2	24.5	14.1	31.2	54.6	..	..
Mali	212	346	65.8	64.8	9.6	12.3	18.3	21.4	6.2	1.5
Mauritania	128	*217*	59.1	*55.7*	13.6	*10.5*	24.2	*32.4*	3.1	*1.3*
Mauritius	174	684	64.7	36.8	12.9	25.9	15.2	33.3	7.2	3.9
Mexico	6,514	12,616	28.2	13.4	47.0	30.8	16.3	21.2	8.5	34.5
Moldova	..	195	..	52.8	..	24.8	..	21.2	..	1.2
Mongolia	*31*	*95*	*48.4*	*63.7*	*0.3*	*20.4*	*51.3*	*15.8*	..	..
Morocco	1,436	1,724	34.4	33.1	6.8	18.3	55.5	46.3	3.3	2.3
Mozambique	124	*319*	79.0	*32.6*	0.0	..	14.5	*65.0*	6.5	*2.4*
Myanmar	85	343	56.8	..	4.6	..	31.7	..	6.9	..
Namibia	..	506	..	33.5	..	19.6	..	38.0	..	8.8
Nepal	81	212	30.1	27.7	29.2	46.0	38.2	26.3	2.5	*2.9*
Netherlands	18,148	45,197	43.9	30.2	26.6	22.6	27.1	44.5	2.4	2.7
New Zealand	1,843	4,981	39.4	40.9	28.3	29.1	31.8	26.7	0.6	3.3
Nicaragua	104	238	50.7	32.4	29.9	27.3	14.2	37.8	5.2	2.5
Niger	279	*152*	43.0	*58.9*	6.6	*8.8*	43.7	*30.3*	6.7	*2.0*
Nigeria	5,285	4,712	33.7	15.8	18.7	38.5	44.8	43.3	2.8	2.3
Norway	6,996	14,582	52.2	35.6	21.1	30.5	23.3	29.1	3.4	4.7
Oman	518	1,166	34.1	41.8	6.2	4.0	55.9	49.5	3.8	4.6
Pakistan	853	3,259	64.5	65.3	9.6	13.3	22.8	17.5	3.0	3.9
Panama	588	1,204	65.4	63.3	9.5	13.6	14.9	10.7	10.2	12.4
Papua New Guinea	302	*747*	60.4	*24.1*	5.9	*9.6*	28.9	*58.3*	4.8	*7.9*
Paraguay	260	746	58.0	..	21.0	..	13.2	..	7.9	..
Peru	880	2,290	55.4	39.3	12.2	18.4	25.2	32.8	7.2	9.5
Philippines	1,439	14,122	52.1	18.9	7.4	13.7	39.8	66.6	0.8	0.8
Poland	2,023	5,814	59.9	27.3	12.9	10.1	25.3	44.8	2.0	17.7
Portugal	1,525	6,387	48.8	26.4	19.1	33.7	27.2	32.7	4.9	7.2
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	1,045	2,037	76.8	32.6	7.0	33.4	7.7	29.3	8.5	4.7
Russian Federation	..	18,715	..	16.1	..	53.0	..	28.8	..	2.0

4.8 Structure of service imports

	Service imports		Transport		Travel		Communications, computer, information, and other services		Insurance and financial services	
	$ millions		% of total		% of total		% of total		% of total	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	123	243	63.5	26.4	9.3	29.1	27.3	44.5	..	..
Saudi Arabia	30,231	25,477	17.1	8.3	8.1	0.0	73.3	90.8	1.5	0.9
Senegal	340	*578*	46.9	*39.9*	17.6	*12.4*	29.0	*42.8*	6.5	*4.9*
Sierra Leone	85	*92*	54.8	*15.0*	9.8	*53.9*	23.4	*27.8*	11.9	*3.3*
Singapore	2,912	19,534	38.3	32.3	11.4	31.4	46.1	31.1	4.3	5.1
Slovak Republic	..	2,094	..	16.3	..	20.9	..	56.6	..	6.1
Slovenia	..	1,453	..	25.1	..	37.5	..	35.8	..	1.6
South Africa	3,805	6,244	48.4	44.0	20.3	31.2	20.0	16.7	11.3	8.1
Spain	5,732	24,675	38.6	28.9	21.5	18.2	34.6	46.2	5.4	6.7
Sri Lanka	351	1,301	60.4	58.4	9.5	13.8	23.5	21.8	6.5	6.0
Sudan	259	292	34.3	73.1	16.8	19.2	44.5	7.4	4.5	0.2
Sweden	7,018	19,559	35.9	24.0	31.6	33.6	28.1	41.2	4.4	1.2
Switzerland	4,885	*15,387*	30.4	*24.9*	48.8	*49.0*	19.3	*25.1*	1.6	*1.0*
Syrian Arab Republic	521	1,489	26.6	44.9	33.9	36.6	37.3	18.5	2.2	..
Tajikistan	..	..	..	..	..	..	..	..	..	..
Tanzania	295	797	62.1	25.8	6.7	51.1	25.6	20.4	5.5	2.7
Thailand	1,644	17,337	64.4	39.6	14.8	19.7	14.8	35.5	5.9	5.1
Togo	167	..	62.7	..	14.1	..	16.7	..	6.6	..
Trinidad and Tobago	645	*242*	45.7	*38.9*	21.6	*28.7*	23.5	*25.1*	9.2	*7.3*
Tunisia	600	1,129	51.1	44.6	17.7	20.7	25.5	25.5	5.7	9.2
Turkey	569	8,507	50.5	22.1	18.3	20.2	27.1	51.3	4.2	6.4
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uganda	123	405	58.2	34.9	14.6	19.8	22.8	41.4	4.4	3.9
Ukraine	..	2,268	..	21.0	..	13.4	..	62.0	..	3.5
United Arab Emirates	..	..	..	..	..	..	..	..	..	..
United Kingdom	27,933	72,032	47.5	29.6	22.9	39.2	29.6	30.0	..	1.2
United States	40,970	166,194	37.5	28.4	25.4	31.7	35.0	34.4	2.1	5.5
Uruguay	476	947	31.8	50.4	42.6	27.9	18.1	14.8	7.5	6.9
Uzbekistan	..	650	..	..	..	..	..	..	..	..
Venezuela	4,253	5,350	31.7	28.3	47.0	47.0	16.5	21.5	4.8	3.2
Vietnam	..	3,153	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	692	..	47.5	..	12.9	..	39.6	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	651	..	53.5	..	8.5	..	33.9	..	4.0	..
Zimbabwe	395	..	43.3	..	40.3	..	13.9	..	2.6	..
World	445,109 t	1,377,289 t	37.9 w	28.1 w	23.8 w	28.9 w	35.1 w	38.9 w	3.6 w	4.6 w
Low income	18,825	37,733	46.5	45.5	13.8	19.7	35.2	30.9	4.8	4.3
Middle income	109,958	280,480	35.3	28.2	19.2	24.1	41.4	42.1	4.4	6.0
Lower middle income	*35,891*	146,180	47.0	31.3	18.7	26.9	28.2	37.4	6.1	4.4
Upper middle income	72,140	134,314	30.9	25.1	19.4	21.3	46.4	46.9	3.7	7.9
Low & middle income	129,097	318,330	37.0	29.7	18.4	23.8	40.5	41.2	4.4	5.9
East Asia & Pacific	*14,593*	101,948	52.2	32.0	16.9	21.2	28.8	43.8	*3.8*	3.7
Europe & Central Asia	..	59,171	61.6	20.5	11.5	34.3	22.4	39.5	4.4	5.9
Latin America & Carib.	29,427	66,252	40.8	33.8	32.0	29.7	22.0	25.3	6.1	11.2
Middle East & N. Africa	54,134	51,371	26.3	18.3	12.6	7.3	58.1	72.4	3.0	2.1
South Asia	3,136	13,569	61.7	57.6	6.5	12.6	27.0	24.8	4.8	5.1
Sub-Saharan Africa	19,654	27,786	43.3	35.5	16.3	29.2	34.5	30.4	6.2	5.3
High income	318,496	1,059,321	38.3	27.6	25.9	30.4	33.0	38.2	3.2	4.2
Europe EMU	139,359	410,100	31.8	25.6	28.5	29.2	35.6	40.5	4.0	4.7

a. Includes Luxembourg. b. Data prior to 1992 include Eritrea. c. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Structure of service imports 4.8

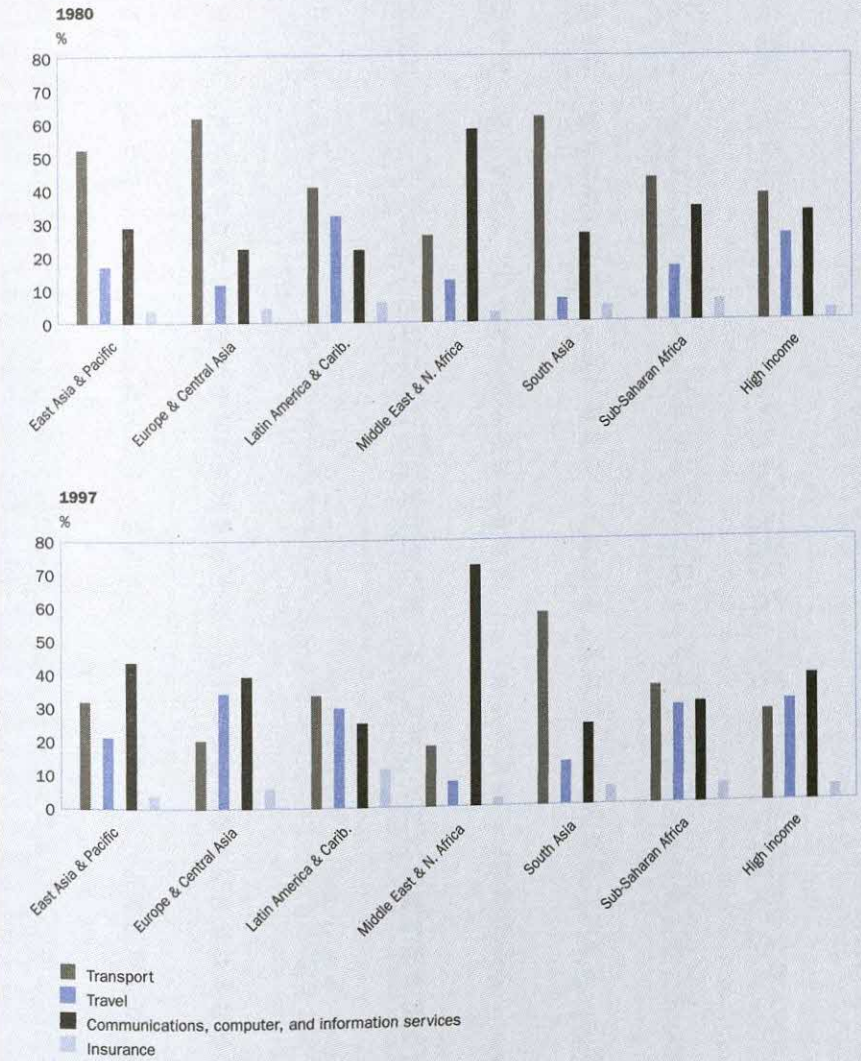
About the data

The leading service exporters are also the leading service importers. High-income economies dominate world service trade, but developing countries' share has been increasing. In recent years service trade has grown most rapidly in Asia, where nominal growth in 1990–97 surpassed the rate in the previous decade. In East Asia and the Pacific, already the leading trader among developing regions, service trade grew 13 percent a year in 1980–90, and 21 percent in 1990–97. South Asia, beginning from a much smaller base, has seen growth in its service trade accelerate from 5 percent a year in the 1980s to 11 percent in the 1990s. Further reductions in barriers to service trade in the next round of World Trade Organization negotiations could stimulate even faster growth early in the 21st century.

Data on service imports are taken from balance of payments statistics. For more information on trade in services see *About the data* for table 4.7.

Figure 4.8

A shifting dominance in service imports



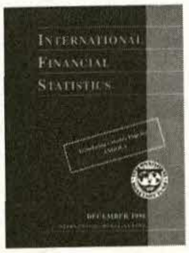
Source: International Monetary Fund, Balance of Payments data files.

Transport and travel, the dominant service import sectors in the 1980s, are being outpaced by the rapidly growing imports of communications, computer, and information services.

Definitions

- **Service imports** refer to economic output of intangible commodities that may be produced, transferred, and consumed at the same time. International transactions in services are defined by the International Monetary Fund's (IMF) *Balance of Payments Manual* (1993), but definitions may nevertheless vary among reporting economies. • **Transport** covers all transport services (sea, air, land, internal waterway, space, and pipeline) performed by residents of one economy for those of another and involving the carriage of passengers, movement of goods (freight), rental of carriers with crew, and related support and auxiliary services. Excluded are freight insurance, which is included in insurance services; goods procured in ports by nonresident carriers and repairs of transport equipment, which are included in goods; repairs of railway facilities, harbors, and airfield facilities, which are included in construction services; and rental of carriers without crew, which is included in other services. • **Travel** covers goods and services acquired from an economy by travelers in that economy for their own use during visits of less than one year for business or personal purposes. • **Communications, computer, information, and other services** cover international telecommunications and postal and courier services; computer data; news-related service transactions between residents and nonresidents; construction services; royalties and license fees; miscellaneous business, professional, and technical services; personal, cultural, and recreational services; and government services not included elsewhere.
- **Insurance and financial services** cover various types of insurance provided to nonresidents by resident insurance enterprises and vice versa, and financial intermediary and auxiliary services (except those of insurance enterprises and pension funds) exchanged between residents and nonresidents.

Data sources



Data on exports and imports of services come from the IMF's balance of payments data files. The IMF publishes balance of payments data in its *International Financial Statistics* and *Balance of Payments Statistics Yearbook.*

4.9 Structure of demand

	Private consumption		General government consumption		Gross domestic investment		Exports of goods and services		Imports of goods and services		Gross domestic savings	
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP		% of GDP	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	56	103	9	11	35	12	23	12	23	37	35	–13
Algeria	43	51	14	14	39	26	34	31	30	22	43	35
Angola	..	30	..	43	..	25	..	68	..	65	..	27
Argentina	76	78	..[a]	3	25	20	5	9	6	11	24	18
Armenia	..	116	..	13	..	9	..	20	..	58	..	–29
Australia	59	*63*	18	*17*	25	*20*	16	*20*	18	*20*	24	*21*
Austria	55	*57*	18	*20*	29	*24*	36	*41*	38	*41*	27	*23*
Azerbaijan	..	83	..	8	..	28	..	19	..	37	..	10
Bangladesh	86	81	2	4	22	21	4	12	14	18	13	15
Belarus	..	59	..	19	..	26	..	60	..	64	..	22
Belgium	64	*63*	18	*15*	22	*18*	57	*68*	60	*64*	19	*22*
Benin	96	79	9	10	15	18	23	25	43	33	–5	11
Bolivia	67	75	14	15	17	19	25	21	23	29	19	10
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	47	28	18	27	35	26	50	56	49	38	36	45
Brazil	70	63	9	18	23	21	9	8	11	10	21	19
Bulgaria	55	70	6	12	34	12	36	61	31	56	39	17
Burkina Faso	95	79	10	12	17	25	10	14	33	30	–6	9
Burundi	91	83	9	15	14	7	9	10	23	14	–1	3
Cambodia	..	87	..	9	..	16	..	30	..	42	..	4
Cameroon	70	71	10	8	21	16	27	27	27	22	20	21
Canada	53	*58*	22	*21*	23	*18*	28	*40*	26	*36*	25	*21*
Central African Republic	94	84	15	9	7	9	25	21	41	23	–9	7
Chad	*100*	92	*4*	7	3	19	17	17	29	35	–9	1
Chile	71	66	12	10	21	27	23	27	27	29	17	25
China	51	46	15	12	35	38	6	23	7	18	35	43
Hong Kong, China	60	61	6	9	35	34	90	132	91	135	34	31
Colombia	70	68	10	16	19	19	16	15	16	18	20	16
Congo, Dem. Rep.	82	83	8	8	10	7	16	24	16	22	10	9
Congo, Rep.	47	46	18	19	36	26	60	77	60	68	36	35
Costa Rica	66	63	18	12	27	27	26	46	37	48	16	25
Côte d'Ivoire	63	65	17	12	27	16	35	47	41	40	20	23
Croatia	..	*66*	..	*30*	..	*15*	..	*42*	..	*53*	..	*3*
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	51	..	20	31	34	..	58	..	63	..	28
Denmark	53	*50*	27	*26*	21	*19*	33	*35*	35	*31*	20	*24*
Dominican Republic	77	70	8	8	25	25	19	48	29	51	15	22
Ecuador	60	67	15	12	26	20	25	30	25	29	26	21
Egypt, Arab Rep.	69	77	16	10	28	18	31	20	43	25	15	13
El Salvador	72	86	14	9	13	15	34	24	33	35	14	4
Eritrea	..	85	..	33	..	41	..	31	..	89	..	–17
Estonia	..	59	..	23	..	30	..	77	..	89	..	18
Ethiopia[b]	*83*	80	*14*	11	*9*	19	*11*	16	*17*	26	*3*	9
Finland	54	*53*	18	*22*	29	*17*	33	*38*	34	*30*	28	*25*
France	59	*61*	18	*19*	24	*17*	22	*24*	23	*21*	23	*20*
Gabon	26	38	13	14	28	26	65	64	32	42	61	48
Gambia, The	63	85	31	11	27	18	43	47	64	61	6	4
Georgia	56	95	13	9	29	7	..	12	..	23	31	–4
Germany	..	*58*	..	*20*	..	*21*	..	*24*	..	*23*	..	*22*
Ghana	84	80	11	10	6	24	8	24	9	38	5	10
Greece	62	*75*	12	*14*	33	*19*	16	*15*	22	*24*	27	*11*
Guatemala	79	87	8	5	16	14	22	18	25	24	13	8
Guinea	..	74	..	7	..	22	..	18	..	21	..	19
Guinea-Bissau	73	88	28	7	28	24	13	21	42	40	–1	5
Haiti	82	97	10	7	17	10	22	8	31	23	8	–4
Honduras	70	63	13	15	25	32	36	37	44	47	17	22

Structure of demand 4.9

	Private consumption		General government consumption		Gross domestic investment		Exports of goods and services		Imports of goods and services		Gross domestic savings	
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP		% of GDP	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Hungary	61	63	10	10	31	27	39	45	41	46	29	27
India	73	70	10	10	21	24	7	12	10	16	17	20
Indonesia	51	63	11	7	24	31	34	28	20	28	38	31
Iran, Islamic Rep.	53	*53*	21	*13*	30	*29*	13	*21*	16	*16*	26	*34*
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	67	*53*	19	*14*	27	*18*	48	*76*	61	*61*	14	*33*
Israel	53	62	40	29	22	22	44	32	59	45	7	9
Italy	61	*61*	15	*16*	27	*17*	22	*27*	25	*21*	24	*22*
Jamaica	64	61	20	18	16	35	51	51	51	64	16	22
Japan	59	*60*	10	*10*	32	*30*	14	*10*	15	*9*	31	*30*
Jordan	79	69	29	25	37	29	40	51	84	74	–8	6
Kazakhstan	..	81	..	5	..	16	..	35	..	37	..	13
Kenya	62	72	20	17	29	19	28	29	39	37	18	11
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	64	55	12	11	32	35	34	38	41	39	24	34
Kuwait	31	47	11	28	14	13	78	53	34	41	58	25
Kyrgyz Republic	..	69	..	17	..	22	..	38	..	46	..	14
Lao PDR	..	81	..	7	..	29	..	24	..	41	..	11
Latvia	59	67	8	23	26	20	..	50	..	61	33	10
Lebanon	..	101	..	16	..	27	..	10	..	54	..	–17
Lesotho	133	82	26	28	43	86	20	33	122	128	–59	–10
Libya	21	..	22	..	22	..	66	..	31	..	57	..
Lithuania	..	65	..	19	..	27	..	55	..	65	..	16
Macedonia, FYR	..	85	..	12	..	19	..	40	..	56	..	3
Madagascar	89	89	12	7	15	12	13	22	30	30	–1	4
Malawi	70	85	19	13	25	12	25	24	39	35	11	2
Malaysia	51	45	17	11	30	43	58	94	55	93	33	44
Mali	89	74	10	12	16	23	16	25	31	35	1	14
Mauritania	68	79	25	12	36	18	37	40	67	49	7	9
Mauritius	75	64	14	12	21	28	51	62	61	65	10	24
Mexico	65	65	10	8	27	26	11	30	13	30	25	26
Moldova	..	74	..	26	..	24	..	53	..	76	..	0
Mongolia	*44*	*64*	*29*	*16*	*63*	22	*21*	55	*57*	59	*27*	18
Morocco	68	65	18	18	24	21	17	28	28	32	14	17
Mozambique	94	76	15	10	8	30	15	18	32	34	–8	14
Myanmar	82	88	..[a]	..[a]	21	13	9	1	13	1	18	12
Namibia	47	55	17	31	29	20	76	53	68	58	37	14
Nepal	82	81	7	9	18	21	12	26	19	38	11	10
Netherlands	61	*60*	17	*14*	22	*20*	51	*54*	52	*47*	22	*26*
New Zealand	63	*63*	18	*14*	21	*22*	30	*29*	32	*28*	19	*22*
Nicaragua	82	*84*	20	*13*	17	*28*	24	*41*	43	*66*	–2	*3*
Niger	5	83	10	14	28	11	25	16	38	24	15	3
Nigeria	56	70	12	9	21	15	29	41	19	34	31	22
Norway	47	*48*	19	*20*	28	*23*	43	*41*	37	*32*	34	*32*
Oman	28	..	25	..	22	..	63	..	38	..	47	..
Pakistan	83	78	10	12	18	15	12	16	24	21	7	10
Panama	45	*53*	18	*15*	28	*29*	98	*94*	89	*91*	38	*32*
Papua New Guinea	61	44	24	23	25	37	43	56	53	60	15	33
Paraguay	76	67	6	13	32	23	15	22	29	24	18	20
Peru	57	67	11	12	29	25	22	13	19	17	32	21
Philippines	67	73	9	13	29	25	24	49	28	59	24	15
Poland	67	64	9	18	26	22	28	26	31	30	23	18
Portugal	65	*65*	13	*18*	34	*24*	25	*31*	38	*38*	21	*17*
Puerto Rico	75	..	16	..	17	..	65	..	73	..	10	..
Romania	60	75	5	10	40	21	35	30	40	37	35	14
Russian Federation	..	63	..	12	..	22	..	23	..	20	..	25

4.9 Structure of demand

	Private consumption		General government consumption		Gross domestic investment		Exports of goods and services		Imports of goods and services		Gross domestic savings	
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP		% of GDP	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Rwanda	83	99	12	9	16	11	14	6	26	24	4	–7
Saudi Arabia	22	35	16	30	22	20	71	45	30	31	62	35
Senegal	85	77	20	10	12	19	27	33	44	38	–5	13
Sierra Leone	..	98	21	10	..	–5	18	14	28	17	..	–8
Singapore	53	39	10	9	46	37	215	187	224	170	38	51
Slovak Republic	..	49	..	22	..	35	..	56	..	64	..	28
Slovenia	..	57	..	20	..	24	..	57	..	58	..	23
South Africa	50	62	13	21	28	16	36	28	28	27	36	17
Spain	66	*62*	13	*16*	23	*21*	16	*26*	18	*25*	21	*21*
Sri Lanka	80	72	9	10	34	24	32	36	55	44	11	17
Sudan	82	..	16	..	15	..	11	..	23	..	2	..
Sweden	51	*52*	29	*26*	21	*15*	29	*40*	31	*33*	19	*21*
Switzerland	62	*61*	12	*14*	29	*20*	35	*36*	38	*32*	25	*24*
Syrian Arab Republic	67	69	23	12	28	29	18	30	35	40	10	19
Tajikistan	..	*71*	..	*11*	..	*17*	..	*114*	..	*114*	..	*18*
Tanzania[c]	..	*83*	..	*13*	..	*20*	..	*22*	..	*36*	..	*3*
Thailand	65	54	12	10	29	35	24	47	30	46	23	36
Togo	54	80	22	10	28	16	51	31	56	37	23	10
Trinidad and Tobago	46	75	12	10	31	22	50	49	39	56	42	15
Tunisia	62	60	14	16	29	27	40	44	46	46	24	24
Turkey	77	68	12	12	18	25	5	25	12	30	11	19
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	*89*	83	*11*	10	6	15	19	13	26	20	0	8
Ukraine	..	62	..	22	..	20	..	41	..	44	..	16
United Arab Emirates	17	..	11	..	28	..	78	..	34	..	72	..
United Kingdom	59	*64*	22	*21*	17	*16*	27	*30*	25	*30*	19	*15*
United States	64	*68*	17	*16*	20	*18*	10	*12*	11	*13*	19	*16*
Uruguay	76	74	12	14	17	13	15	23	21	23	12	12
Uzbekistan	..	61	..	21	..	19	..	38	..	38	..	19
Venezuela	55	67	12	6	26	18	29	29	22	20	33	27
Vietnam	..	70	..	9	..	29	..	46	..	54	..	21
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	68	..	19	..	21	..	44	..	52	..	13
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	55	78	26	12	23	15	41	33	45	38	19	10
Zimbabwe	68	72	19	16	17	19	23	36	27	43	14	12
World	**61 w**	***62* w**	**15 w**	***15* w**	**25 w**	***22* w**	**20 w**	***21* w**	**20 w**	***21* w**	**24 w**	***23* w**
Low income	74	73	10	10	20	22	11	18	17	23	15	17
Middle income	60	61	12	13	27	26	19	25	18	25	27	26
Lower middle income	56	58	14	12	31	29	18	28	19	27	30	30
Upper middle income	63	63	11	15	24	23	19	22	18	23	25	22
Low & middle income	62	62	12	13	26	25	18	24	18	25	26	25
East Asia & Pacific	53	51	14	11	32	36	17	33	16	31	33	38
Europe & Central Asia	..	65	..	14	..	23	..	31	..	33	..	21
Latin America & Carib.	68	67	10	13	24	22	13	15	14	16	22	20
Middle East & N. Africa	45	*57*	18	*18*	27	*24*	43	*33*	32	*32*	38	*25*
South Asia	75	72	9	10	21	23	8	13	14	18	15	18
Sub-Saharan Africa	59	66	14	17	24	18	33	32	31	32	26	17
High income	60	*62*	16	*16*	25	*21*	20	*21*	21	*20*	24	*22*
Europe EMU	..	*60*	..	*18*	..	*19*	..	*30*	..	*27*	..	*22*

a. General government consumption figures are not available separately; they are included in private consumption. b. Data prior to 1992 include Eritrea. c. Data cover mainland Tanzania only.

Structure of demand 4.9

About the data

Expenditures from GDP include private consumption, general government consumption, gross domestic fixed capital formation (private and public investment), changes in inventories, and exports (minus imports) of goods and services. Such expenditures are generally recorded in purchasers' prices and so include net indirect taxes.

Because policymakers have tended to focus on fostering the growth of output, and because data on production are easier to collect than data on spending, many countries generate their primary estimate of GDP using the production approach. Moreover, many countries do not estimate all the separate components of national expenditures or, if they do, derive some of the main aggregates indirectly using GDP (output) as the control total.

Private consumption is often estimated as a residual, by subtracting from GDP all other known expenditures. The resulting aggregate may incorporate fairly large discrepancies. When private consumption is calculated separately, the household surveys on which much of the estimates are based tend to be one-year studies with limited coverage. Thus the estimates quickly become outdated and must be supplemented by price- and quantity-based statistical estimating procedures. Complicating the issue, in many developing countries the distinction between cash outlays for personal business and those for household use may be blurred. General government consumption usually includes expenditures on national defense and security, some of which are now considered to be part of investment.

Gross domestic investment consists of outlays on additions to the economy's fixed assets plus net changes in the level of inventories. Under the revised (1993) guidelines for the United Nations System of National Accounts (SNA), gross domestic investment also includes capital outlays on defense establishments that may be used by the general public, such as schools and hospitals, and on certain types of private housing for family use. All other defense expenditures are treated as current spending. Investment data may be estimated from direct surveys of enterprises and administrative records or based on the commodity flow method using data from trade and construction activities. While the quality of data on public fixed investment depends on the quality of government accounting systems (which tend to be weak in developing countries), measures of private fixed investment—particularly capital outlays by small, unincorporated enterprises—are usually very unreliable.

Estimates of changes in inventories are rarely complete but usually include the most important activities or commodities. In some countries these estimates are derived as a composite residual along with aggregate private consumption. According to national accounts conventions, adjustments should be made for appreciation of the value of inventories due to price changes, but this is not always done. In highly inflationary economies this element can be substantial.

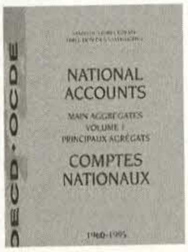
Exports and imports are compiled from customs returns and from balance of payments data obtained from central banks. Although the data on exports and imports from the payments side provide reasonably reliable records of cross-border transactions, they may not adhere strictly to the appropriate valuation and timing definitions of the balance of payments or, more important, correspond with the change-of-ownership criterion. This issue has assumed greater significance with the increasing globalization of international business. Neither customs nor balance of payments data capture the illegal transactions that occur in many countries. Goods carried by travelers across borders in legal but unreported shuttle trade may further distort trade statistics.

For further discussion of the problems of building and maintaining national accounts see Srinivasan (1994), Heston (1994), and Ruggles (1994). For a classic analysis of the reliability of foreign trade and national income statistics see Morgenstern (1963).

Definitions

• **Private consumption** is the market value of all goods and services, including durable products (such as cars, washing machines, and home computers) purchased or received as income in kind by households and nonprofit institutions. It excludes purchases of dwellings but includes imputed rent for owner-occupied dwellings. In practice, it may include any statistical discrepancy in the use of resources relative to the supply of resources. • **General government consumption** includes all current spending for purchases of goods and services (including wages and salaries) by all levels of government, excluding most government enterprises. It also includes most expenditures on national defense and security. • **Gross domestic investment** consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including commercial and industrial buildings, offices, schools, hospitals, and private residential dwellings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales. • **Exports and imports of goods and services** represent the value of all goods and other market services provided to the world. Included is the value of merchandise, freight, insurance, travel, and other nonfactor services. Factor and property income (formerly called factor services), such as investment income, interest, and labor income, is excluded. Transfer payments are excluded from the calculation of GDP. • **Gross domestic savings** are calculated as the difference between GDP and total consumption.

Data sources



OECD · OCDE

NATIONAL ACCOUNTS

MAIN AGGREGATES

VOLUME I

PRINCIPAUX AGRÉGATS

COMPTES NATIONAUX

1960-1995

The national accounts indicators for developing countries are collected from national statistical organizations and central banks by visiting and resident World Bank missions. Data for industrial countries come from Organisation for Economic Co-operation and Development (OECD) data files (see OECD, *National Accounts, 1960–1996*, volumes 1 and 2). The complete national accounts time series is available on the *World Development Indicators 1999* CD-ROM. The United Nations publishes detailed national accounts for member countries in *National Accounts Statistics: Main Aggregates and Detailed Tables;* updates are published in the *Monthly Bulletin of Statistics.*

4.10 Growth of consumption and investment

	Private consumption				Private consumption per capita		General government consumption		Gross domestic investment	
	$ millions		average annual % growth		average annual % growth		average annual % growth		average annual % growth	
	1980	1997	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97
Albania	..	2,523	..	6.2	..	6.0	..	–5.0	–0.3	26.9
Algeria	18,293	24,030	1.9	1.0	–1.1	–1.3	4.7	3.8	–2.3	–1.9
Angola	..	2,278	*0.1*	–6.9	*–2.7*	–9.9	*8.4*	–0.7	*–5.6*	16.3
Argentina	..	254,987	..	..	..	..	..	..	–5.2	12.6
Armenia	..	1,886	..	–8.6	..	–9.4	..	–2.1	..	–10.9
Australia	94,360	*249,229*	3.0	*3.6*	1.5	*2.4*	3.5	*2.4*	2.7	*5.4*
Austria	43,264	*129,921*	2.4	*2.1*	2.2	*1.4*	1.4	*1.7*	2.2	*2.6*
Azerbaijan	..	3,637	..	..	..	..	..	–30.9	..	4.4
Bangladesh	14,966	34,265	4.7	4.0	2.2	2.3	5.2	6.3	1.4	6.7
Belarus	..	13,363	..	–5.1	..	–5.2	..	–5.8	..	–12.2
Belgium	76,629	*169,285*	1.7	*1.0*	1.6	*0.7*	0.5	*1.2*	3.2	*–0.3*
Benin	1,356	1,687	1.8	2.8	–1.3	–0.1	0.5	3.4	–5.6	4.2
Bolivia	1,872	5,963	1.2	3.4	–0.9	1.0	–3.8	3.5	1.0	6.5
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	483	1,442	11.1	–2.7	7.4	–5.3	13.4	9.7	11.4	–0.7
Brazil	163,889	518,880	1.6	5.1	–0.4	3.6	7.3	–2.3	0.2	4.0
Bulgaria	11,089	7,237	2.5	–1.7	2.6	–1.0	9.1	–14.4	2.4	–12.8
Burkina Faso	1,631	1,880	2.6	2.8	0.1	0.4	6.2	2.4	8.6	3.2
Burundi	840	793	3.4	–1.9	0.5	–4.1	3.2	–2.5	6.9	–18.5
Cambodia	..	2,645	..	..	..	..	..	..	..	..
Cameroon	4,710	6,488	3.9	2.2	1.0	–0.6	5.3	–3.7	–2.7	–3.7
Canada	141,521	*341,855*	3.3	*1.8*	2.1	*0.5*	2.5	*–0.2*	5.2	*1.5*
Central African Republic	747	856	1.5	2.1	–0.9	0.0	–1.7	–13.9	10.0	–12.0
Chad	837	1,484	3.7	2.7	1.2	–0.6	16.5	–8.9	..	18.6
Chile	19,489	50,492	2.0	9.3	0.3	7.6	0.4	3.7	6.4	14.7
China	103,442	435,690	9.7	10.1	8.1	8.8	7.4	9.9	11.1	14.2
Hong Kong, China	17,013	104,106	6.7	5.9	5.3	3.9	5.0	5.1	4.0	11.1
Colombia	23,442	64,846	2.6	4.2	0.5	2.2	4.2	8.5	0.5	16.7
Congo, Dem. Rep.	12,167	5,038	3.4	–6.2	0.0	–9.2	0.0	–18.5	–5.1	–4.9
Congo, Rep.	797	1,057	2.5	4.6	–0.4	1.7	4.0	–10.0	–11.9	–0.6
Costa Rica	3,156	5,644	2.9	3.4	–0.1	1.5	1.1	2.8	5.3	2.4
Côte d'Ivoire	6,388	6,698	1.5	0.4	–2.0	–2.5	–0.1	1.6	–9.8	16.5
Croatia	..	*12,647*	..	*3.5*	..	*3.5*	..	*4.8*	..	*1.2*
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	26,726	..	3.2	..	3.2	..	–1.6	2.3	5.0
Denmark	35,814	*92,626*	1.8	*3.2*	1.8	*2.8*	1.1	*2.0*	3.9	*3.4*
Dominican Republic	5,109	10,564	1.6	3.7	–0.6	1.8	1.9	3.5	3.5	10.8
Ecuador	6,995	13,294	1.9	2.4	–0.7	0.2	–1.4	–0.7	–3.8	3.9
Egypt, Arab Rep.	15,848	56,844	4.1	4.1	1.5	2.1	2.7	2.0	0.0	2.5
El Salvador	2,567	9,742	0.8	6.5	–0.2	4.2	0.1	3.2	2.2	8.3
Eritrea	..	555	..	..	..	..	..	..	..	..
Estonia	..	2,733	..	–2.9	..	–1.7	..	4.9	..	–6.0
Ethiopia[a]	*4,282*	5,101	*0.5*	5.2	*–2.5*	3.2	*4.5*	–0.6	*7.0*	15.4
Finland	27,761	*68,455*	3.8	*–0.4*	3.4	*–0.8*	3.4	*–0.8*	3.0	*–5.4*
France	391,263	*935,923*	2.6	*1.2*	2.1	*0.7*	2.2	*2.1*	2.8	*–2.0*
Gabon	1,119	1,945	1.5	–0.7	–1.8	–3.3	–0.6	6.4	–5.7	2.3
Gambia, The	152	346	–2.6	3.4	–6.0	–0.2	1.7	–6.2	0.0	4.4
Georgia	..	4,964	..	..	..	..	..	..	..	..
Germany	..	*1,359,274*	..	*1.4*	..	*0.9*	..	*1.8*	..	*0.8*
Ghana	3,730	5,500	2.8	3.7	–0.6	0.9	2.4	4.6	3.3	2.5
Greece	32,706	*91,847*	2.4	*1.5*	1.9	*1.0*	2.7	*1.3*	–0.8	*3.4*
Guatemala	6,217	15,454	1.2	4.4	–1.3	1.6	2.6	4.2	–1.8	3.4
Guinea	..	2,887	..	4.1	..	1.4	..	–0.6	..	6.1
Guinea-Bissau	*109*	233	0.8	7.1	–1.3	4.7	7.2	–0.2	12.9	–6.5
Haiti	1,197	2,743	0.9	..	..	..	–4.4	..	–0.6	1.8
Honduras	1,806	2,827	2.7	3.5	–0.5	0.5	3.3	–1.2	2.9	7.9

Growth of consumption and investment 4.10

	Private consumption				Private consumption per capita		General government consumption		Gross domestic investment	
	$ millions		average annual % growth		average annual % growth		average annual % growth		average annual % growth	
	1980	1997	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97	1980–90	1990–97
Hungary	13,574	28,459	1.3	–1.8	1.7	–1.5	1.9	1.0	–0.9	7.3
India	125,856	269	4.6	6.0	2.5	4.1	7.7	3.5	6.5	8.4
Indonesia	40,821	133,448	5.6	8.1	3.7	6.4	4.6	2.3	6.7	10.4
Iran, Islamic Rep.	48,854	*47,943*	2.8	*2.2*	–0.6	*0.6*	–5.0	*8.6*	–2.5	*–0.8*
Iraq	..	..	..	..	..	..	..	..	..	..
Ireland	13,585	*37,307*	2.2	*4.2*	1.9	*3.6*	–0.3	*2.9*	–0.4	*1.9*
Israel	11,547	60,685	5.3	6.9	3.5	3.7	0.5	3.0	2.2	8.9
Italy	273,819	*744,885*	3.0	*0.3*	2.9	*0.2*	2.5	*0.2*	1.9	*–1.9*
Jamaica	1,692	2,506	4.5	3.3	3.3	2.4	6.3	1.2	–0.1	7.6
Japan	623,286	*2,751,277*	3.7	*2.0*	3.2	*1.7*	2.4	*2.3*	5.3	*0.5*
Jordan	3,123	4,863	2.2	5.0	–1.5	0.5	2.3	6.8	–1.5	6.2
Kazakhstan	..	17,198	..	–11.4	..	–10.5	..	–13.4	..	–17.5
Kenya	4,506	7,344	4.7	3.1	1.1	0.3	2.6	12.4	0.8	3.7
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	40,473	237,333	8.0	7.0	6.8	5.9	5.2	4.9	11.9	6.3
Kuwait	8,836	14,322	–1.4	..	..	..	2.2	..	–4.5	..
Kyrgyz Republic	..	1,216	..	–8.8	..	–9.6	..	–8.9	..	13.1
Lao PDR	..	..	..	..	..	..	..	..	..	..
Latvia	..	3,712	..	–0.2	..	1.0	5.0	3.4	3.4	–25.1
Lebanon	..	15,118	..	7.9	..	..	..	7.5	..	21.6
Lesotho	492	780	2.0	–2.9	–0.5	–5.1	2.9	4.9	6.3	12.7
Libya	7,171	..	..	..	..	..	..	..	..	..
Lithuania	..	6,235	..	..	..	..	..	..	..	..
Macedonia, FYR	..	1,862	..	7.8	..	7.0	..	–10.9	..	1.3
Madagascar	3,611	3,175	–0.6	1.2	–3.3	–1.6	0.5	–1.4	4.9	–1.2
Malawi	866	2,148	1.5	7.6	–1.7	4.7	6.3	–5.4	–2.8	–9.4
Malaysia	12,378	43,923	3.7	6.8	0.9	4.2	2.7	7.2	2.6	15.3
Mali	1,497	1,885	1.9	1.3	–0.6	–1.5	7.3	–0.4	7.1	5.3
Mauritania	481	869	3.2	4.3	0.5	1.5	–7.1	7.5	–4.1	2.0
Mauritius	854	2,817	6.7	4.6	5.8	3.4	3.3	4.2	9.0	1.7
Mexico	145,440	262,957	1.1	1.2	–1.0	–0.6	2.2	1.5	–3.7	1.7
Moldova	..	1,378	..	11.8	..	12.0	..	0.1	..	–21.9
Mongolia	..	*621*	..	..	..	..	..	..	..	..
Morocco	12,788	23,012	3.7	2.5	1.5	0.7	5.5	0.1	2.5	0.2
Mozambique	2,672	2,092	–2.3	0.9	–3.8	–1.5	–2.1	–9.3	3.8	8.2
Myanmar	..	..	0.6	4.8	..	..	..	..	–4.1	13.0
Namibia	950	1,791	1.1	0.8	–1.6	–1.8	3.7	2.8	–3.5	4.0
Nepal	1,600	3,985	4.5	4.6	1.8	2.1	7.2	6.0	6.0	7.3
Netherlands	104,571	*236,355*	1.7	*2.1*	1.2	*1.5*	2.1	*1.1*	3.1	*0.6*
New Zealand	13,801	*41,064*	2.1	*3.0*	1.3	*1.4*	1.5	*0.8*	2.8	*8.8*
Nicaragua	1,768	*1,661*	–3.5	*3.0*	–6.1	*0.1*	2.3	*–8.5*	–6.1	*9.8*
Niger	1,883	1,541	0.0	1.9	–3.2	–1.5	4.4	–3.1	–7.1	1.2
Nigeria	36,258	27,743	–2.6	–0.8	–5.5	–3.7	–3.5	–3.2	–8.5	10.4
Norway	29,694	*75,456*	2.2	*3.0*	1.9	*2.4*	2.3	*2.6*	0.8	*4.1*
Oman	1,657	..	..	..	..	..	..	..	25.5	..
Pakistan	19,688	46,473	4.5	5.5	1.8	2.9	10.3	0.8	6.0	3.1
Panama	1,709	*4,201*	4.2	*2.8*	2.1	*1.0*	1.2	*1.1*	–8.9	*15.0*
Papua New Guinea	1,568	2,038	0.4	2.1	–1.7	–0.2	–0.1	1.7	–0.9	8.2
Paraguay	3,467	6,836	2.4	5.5	–0.7	2.8	1.5	9.3	–0.8	3.8
Peru	12,000	43,070	1.5	4.6	–0.7	2.9	–1.8	5.2	–4.2	12.1
Philippines	20,910	59,729	2.6	3.7	0.0	1.3	0.6	3.6	–2.1	5.6
Poland	38,182	87,076	1.1	5.1	0.4	4.9	1.2	4.4	0.9	8.7
Portugal	19,166	*70,645*	2.5	*2.5*	2.4	*2.4*	5.0	*2.5*	3.0	*2.6*
Puerto Rico	10,756	..	3.5	..	..	..	5.1	..	6.9	..
Romania	..	26,273	..	1.4	..	1.8	..	1.7	..	–8.6
Russian Federation	..	283,195	..	6.8	..	7.0	..	–14.2	..	–14.9

4.10 Growth of consumption and investment

	Private consumption				**Private consumption per capita**		**General government consumption**		**Gross domestic investment**	
	$ millions		average annual % growth		average annual % growth		average annual % growth		average annual % growth	
	1980	**1997**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**
Rwanda	969	1,837	1.4	–1.9	–1.6	–1.9	5.2	–10.0	4.3	–8.5
Saudi Arabia	34,538	49,746	..	..	..	..	..	..	..	..
Senegal	2,528	3,480	2.1	2.9	–0.8	0.2	3.3	–2.6	5.2	2.2
Sierra Leone	..	809	0.2	–0.2	–1.9	–2.6	0.0	–0.3	–6.7	*–17.2*
Singapore	6,030	39,107	5.8	7.2	4.1	5.1	6.6	8.3	3.1	9.8
Slovak Republic	..	..	3.8	–2.0	..	..	4.8	0.2	1.1	2.1
Slovenia	..	10,288	..	3.7	..	3.7	..	2.3	..	9.0
South Africa	39,543	79,577	2.3	1.9	–0.2	–0.2	3.5	2.9	–4.7	4.3
Spain	141,274	*360,563*	2.5	*0.9*	2.2	*0.7*	5.4	*2.1*	5.7	*–1.5*
Sri Lanka	3,236	10,913	3.8	5.5	2.4	4.2	7.3	7.2	0.6	5.8
Sudan	6,241	..	0.0	..	..	..	–0.5	..	–1.8	..
Sweden	64,624	*131,982*	1.8	*–0.2*	1.5	*–0.7*	1.5	*0.0*	4.4	*–3.2*
Switzerland	66,985	*180,036*	1.6	*0.4*	1.1	*–0.5*	3.1	*1.0*	4.0	*–0.9*
Syrian Arab Republic	8,690	9,585	3.6	2.4	0.2	–0.6	–3.6	4.4	–5.3	8.8
Tajikistan	..	*1,191*	..	..	..	..	..	..	..	..
Tanzania[b]	..	*4,882*	..	*2.3*	..	*–0.8*	..	*–4.1*	..	*–4.1*
Thailand	21,175	84,476	5.9	6.9	4.1	5.6	4.2	6.1	9.5	6.5
Togo	619	1,177	4.7	0.7	1.6	–2.3	–1.2	–2.9	2.7	20.7
Trinidad and Tobago	2,860	4,415	–1.3	1.0	–2.6	0.2	–1.7	–0.9	–10.1	4.8
Tunisia	5,380	11,364	2.9	3.8	0.3	2.0	3.8	3.8	–1.8	2.4
Turkey	42,088	129,188	..	4.0	..	2.2	..	3.2	..	4.2
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uganda	1,935	5,463	2.6	6.9	0.0	3.6	2.0	7.3	8.0	10.1
Ukraine	..	30,627	..	*–12.3*	..	*–12.1*	..	*–20.3*	..	*–15.4*
United Arab Emirates	5,116	..	4.6	..	..	..	–3.9	..	–8.7	..
United Kingdom	320,290	*734,336*	4.1	*1.6*	3.8	*1.2*	1.1	*1.2*	6.4	*1.4*
United States	1,720,600	*5,043,000*	3.4	*2.7*	2.5	*1.6*	2.8	*–0.2*	2.9	*5.8*
Uruguay	7,680	14,748	0.5	6.2	–0.1	5.5	1.8	2.3	–7.8	9.1
Uzbekistan	..	15,192	..	..	..	..	..	–4.0	..	–7.5
Venezuela	38,062	58,485	1.3	0.8	–1.2	–1.4	2.0	–1.5	–5.3	4.4
Vietnam	..	17,413	..	*8.4*	..	*6.2*	..	*13.1*	..	*28.4*
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	3,875	..	1.3	..	–2.5	..	0.7	..	9.9
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	2,145	3,024	1.8	0.9	–1.3	–1.9	–3.4	–17.8	–8.7	12.1
Zimbabwe	4,622	6,408	3.7	–1.1	0.3	–3.4	4.7	5.0	3.5	0.6
World	6,377,494 t	*18,131,437* t	3.3 w	*2.4* w	1.6 w	*1.0* w	2.8 w	*0.8* w	3.6 w	*2.4* w
Low income	313,070	257,482	3.3	4.0	0.8	1.9	5.4	1.0	3.1	7.2
Middle income	1,353,957	3,288,259	3.0	4.3	1.3	3.0	4.7	–0.4	1.0	4.0
Lower middle income	646,732	1,580,899	4.9	5.0	3.3	3.8	..	–0.9	4.6	2.9
Upper middle income	690,341	1,707,875	1.6	3.7	–0.4	2.1	5.2	0.0	–1.6	5.6
Low & middle income	1,663,173	3,547,470	3.0	4.3	1.0	2.6	4.7	–0.2	1.3	4.3
East Asia & Pacific	212,064	803,252	6.9	8.3	5.1	6.9	5.3	7.7	8.3	12.3
Europe & Central Asia	..	737,230	..	*2.7*	..	*2.6*	..	*–6.0*	..	*–7.5*
Latin America & Carib.	553,947	1,391,133	1.5	3.9	–0.5	2.1	5.5	–0.8	–1.7	5.8
Middle East & N. Africa	148,839	283,370	..	..	..	..	..	..	..	..
South Asia	167,837	97,449	4.6	5.6	2.3	3.7	8.0	3.3	5.4	7.6
Sub-Saharan Africa	153,540	216,340	1.6	1.4	–1.3	–1.2	2.6	1.2	–3.5	4.3
High income	4,789,610	*14,575,473*	3.4	*2.1*	2.7	*1.4*	2.5	*1.1*	4.1	*2.0*
Europe EMU	..	*4,121,936*	..	*1.1*	..	*0.8*	..	*1.4*	..	*0.0*

a. Data prior to 1992 include Eritrea. b. Data cover mainland Tanzania only.

Growth of consumption and investment 4.10

About the data

Measures of consumption and investment growth are subject to two kinds of inaccuracy. The first stems from the difficulty of measuring expenditures at current price levels, as described in *About the data* for table 4.9. The second arises in deflating current price data to measure growth in real terms, where results depend on the relevance and reliability of the price indexes used. Measuring price changes is more difficult for investment goods than for consumption goods because of the one-time nature of many investments and because the rate of technological progress in capital goods makes capturing quality change difficult. (An example is computers—prices have fallen as quality has improved.) Many countries estimate investment from the supply side, identifying capital goods entering an economy directly from detailed production and international trade statistics. This means that the price indexes used in deflating production and international trade, reflecting delivered or offered prices, will determine the deflator for investment expenditures on the demand side.

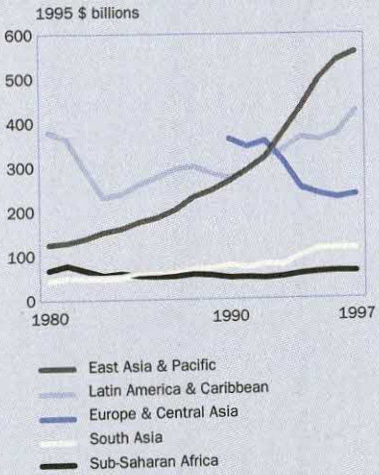
The data in the table on private consumption in current U.S. dollars are converted from national currencies using official exchange rates or an alternative conversion factor as noted in *Primary data documentation*. (For a discussion of alternative conversion factors see *Statistical methods*.) These exchange rates and conversion factors differ from the purchasing power parity conversion factors used to calculate private consumption per capita in table 4.11, which provide better estimates of comparative domestic purchasing power. Growth rates of private consumption per capita, general government consumption, and gross domestic investment are estimated using constant price data. Consumption and investment as shares of current GDP are shown in table 4.9.

To obtain government consumption in constant prices, countries may adjust current values by applying deflators that use a weighted index of government wages and salaries, or simply take a government employment index as a measure of output. Neither technique captures improvements in productivity or changes in the quality of government services. Deflators for private consumption are usually calculated from consumer price series. Many countries estimate private consumption as a residual that includes statistical discrepancies accumulated from other domestic sources; thus these estimates lack detailed breakdowns of expenditures.

Because the methods used to deflate consumption and investment can vary widely among countries, comparisons between countries in a given year, perhaps even more than those over time, should be treated with caution.

Figure 4.10

Regional trends in gross domestic investment



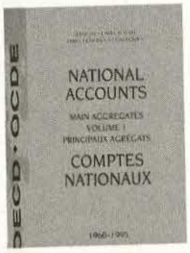
Source: World Bank data files.

Gross domestic investment (in real terms) is declining or stagnant in Sub-Saharan Africa and Europe and Central Asia. In East Asia and the Pacific it is beginning to taper off. South Asia is showing slow but steady growth.

Definitions

- **Private consumption** is the market value of all goods and services, including durable products (such as cars, washing machines, and home computers) purchased or received as income in kind by households and nonprofit institutions. It excludes purchases of dwellings but includes imputed rent for owner-occupied dwellings. In practice, it may include any statistical discrepancy in the use of resources relative to the supply of resources. • **Private consumption per capita** is calculated using World Bank population estimates.
- **General government consumption** includes all current spending for purchases of goods and services (including wages and salaries) by all levels of government, excluding most government enterprises. It also includes most expenditures on national defense and security. • **Gross domestic investment** consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets cover land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including commercial and industrial buildings, offices, schools, hospitals, and private residential dwellings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales.

Data sources



The national accounts indicators for developing countries are collected from national statistical organizations and central banks by visiting and resident World Bank missions. Data for industrial countries come from Organisation for Economic Co-operation and Development (OECD) data files (see OECD, *National Accounts, 1960–1996*, volumes 1 and 2). The complete national accounts time series is available on the *World Development Indicators 1999* CD-ROM. The United Nations publishes detailed national accounts for member countries in *National Accounts Statistics: Main Aggregates and Detailed Tables;* updates are published in the *Monthly Bulletin of Statistics.*

4.11 Structure of consumption in PPP terms

	Private consumption per capita	Household consumption							
	PPP 1997	All food % 1997	Bread and cereals % 1997	Clothing and footwear % 1997	Fuel and power % 1997	Health care % 1997	Education % 1997	Transport and communications % 1997	Other consumption % 1997
Antigua and Barbuda	4,611	33	9	3	2	12	17	6	27
Australia	13,920	14	2	4	3	12	9	13	46
Austria	14,530	13	2	7	4	13	11	13	41
Bangladesh	*780*	*41*	*21*	*4*	*9*	*7*	*23*	*3*	*14*
Belarus	3,137	16	0	6	4	15	21	3	35
Belgium	15,579	15	2	6	3	14	11	11	40
Belize	2,729	28	4	10	2	5	10	11	34
Benin	1,100	45	13	8	3	3	8	14	17
Botswana	3,084	25	9	4	1	7	22	21	19
Bulgaria	3,130	15	0	5	5	9	24	6	36
Cameroon	1,277	38	7	14	2	6	9	8	24
Canada	15,439	9	2	5	4	11	9	11	51
Congo, Rep.	791	36	5	3	1	10	15	18	17
Côte d'Ivoire	1,393	35	8	9	..	8	26	11	11
Croatia	3,768	17	1	3	4	12	13	10	41
Czech Republic	7,795	15	1	4	6	10	15	5	46
Denmark	16,214	10	1	4	3	9	13	9	52
Dominica	2,543	32	5	6	2	9	16	11	23
Egypt, Arab Rep.	1,962	44	11	7	3	8	8	5	26
Fiji	2,669	30	5	4	2	5	12	7	40
Finland	13,353	11	2	3	5	12	11	10	49
France	15,756	12	2	4	3	21	8	12	40
Gabon	2,468	37	7	3	2	8	8	20	23
Germany	*15,229*	*11*	*2*	*6*	*3*	*15*	*6*	*12*	*47*
Greece	*9,315*	*28*	*2*	*5*	*2*	*7*	*6*	*15*	*37*
Grenada	3,241	26	8	4	1	24	14	4	26
Guinea	*1,456*	*32*	*6*	*19*	*2*	*14*	*9*	*9*	*15*
Hong Kong, China	16,496	10	1	18	2	11	4	10	45
Hungary	5,372	14	0	4	5	10	17	6	43
Iceland	*15,490*	*13*	*2*	*5*	*5*	*13*	*10*	*10*	*44*
Indonesia	1,808	45	19	3	3	7	4	15	22
Iran, Islamic Rep.	4,054	23	6	7	12	13	11	11	23
Ireland	11,381	14	3	6	3	11	13	8	45
Italy	14,452	14	2	7	3	14	7	9	46
Jamaica	2,051	26	7	8	1	9	8	24	24
Japan	15,554	11	3	5	2	17	8	9	47
Kenya	872	38	11	8	2	5	22	10	16
Korea, Rep.	6,590	21	4	3	5	13	16	17	24
Luxembourg	*20,993*	*10*	*2*	*4*	*6*	*9*	*8*	*17*	*46*
Malawi	607	45	17	18	2	8	9	8	10
Mali	655	48	13	13	..	2	7	14	15
Mauritius	6,533	24	4	8	3	10	5	19	30
Moldova	872	28	1	5	7	11	25	3	20
Morocco	2,360	45	11	9	2	5	10	10	18
Nepal	804	37	24	8	5	15	20	2	13
Netherlands	14,535	11	2	6	3	16	8	9	47
New Zealand	11,205	12	2	4	3	11	9	13	47
Nigeria	692	48	15	8	6	3	4	5	27
Norway	14,741	13	2	5	10	14	11	8	38
Pakistan	1,064	40	10	6	5	12	7	4	27
Philippines	2,828	33	9	3	1	3	3	4	52
Poland	5,087	20	1	3	5	12	19	6	34
Portugal	9,900	20	4	6	2	7	16	11	39
Romania	3,155	24	1	7	5	6	15	4	39
Russian Federation	2,811	18	1	7	11	13	22	7	22

Structure of consumption in PPP terms 4.11

	Private consumption per capita	Household consumption							
	PPP 1997	All food % 1997	Bread and cereals % 1997	Clothing and footwear % 1997	Fuel and power % 1997	Health care % 1997	Education % 1997	Transport and communications % 1997	Other consumption % 1997
Senegal	1,536	52	11	14	2	2	11	6	13
Sierra Leone	267	48	13	12	3	13	14	8	2
Singapore	16,340	14	2	7	3	11	7	18	42
Slovak Republic	5,894	17	1	5	7	15	20	4	32
Slovenia	8,696	13	0	4	4	11	12	11	45
Spain	10,667	17	2	7	2	11	8	12	43
Sri Lanka	1,401	38	11	0	4	8	7	28	14
St. Kitts and Nevis	4,434	30	8	4	4	24	9	5	24
St. Lucia	3,414	39	5	5	3	13	7	6	26
St. Vincent and the Grenadines	2,833	24	7	4	2	28	14	5	23
Swaziland	2,579	27	6	6	4	10	17	18	19
Sweden	13,583	10	2	5	5	11	9	11	50
Switzerland	16,728	12	2	6	4	13	8	11	45
Thailand	3,162	23	7	8	3	22	10	17	17
Trinidad and Tobago	4,864	20	3	11	4	9	7	15	35
Tunisia	3,687	35	7	6	2	6	7	15	29
Turkey	4,377	23	6	7	4	5	9	7	44
Ukraine	*1,430*	*21*	*1*	*5*	*14*	*13*	*26*	*4*	*17*
United Kingdom	15,490	11	2	6	3	10	8	11	52
United States	21,680	8	1	6	3	12	7	14	49
Vietnam	1,155	40	17	5	4	17	10	..	20
Zambia	625	47	7	8	1	3	12	10	19
Zimbabwe	1,572	28	7	11	2	9	23	14	12

Note: Figures in italics refer to 1996.

4.11 Structure of consumption in PPP terms

About the data

Cross-country comparisons of consumption expenditures must be made in a common currency. But when expenditures in different countries are converted to a single currency using official exchange rates, the comparisons do not account for the sometimes substantial differences in relative prices. Thus the results tend to undervalue real consumption in economies with relatively low prices and to overvalue consumption in countries with high prices. Differences in the structure of prices also distort the apparent structure of consumption. For example, services (such as health care or education) tend to be relatively cheaper than goods in low- and middle-income economies, so when domestic prices are used to calculate consumption patterns, services appear to be undervalued. The problem of making consistent comparisons of real consumption across countries has led to the use of purchasing power parities (PPPs) to convert reported values to a common unit of account.

PPPs measure the relative purchasing power of different currencies over equivalent goods and services. They are international price indexes that allow comparisons of the real value of consumption expenditures between countries in the same way that consumer price indexes allow comparisons of real values over time within countries. To calculate PPPs, data on prices and spending patterns are collected through surveys in each country. Then prices within a region, such as Africa, or a group, such as the Organisation for Economic Co-operation and Development (OECD), are compared. Finally, regions are linked by comparing regional prices, to create a globally consistent set of comparisons. The resulting PPP indexes measure the purchasing power of national currencies in "international dollars" that have the same purchasing power over GDP as the U.S. dollar has in the United States.

Because the goods and services that make up consumption are valued at uniform prices, PPP-based expenditure shares also provide a consistent view of differences in the real structure of consumption between countries. In other words, the shares shown in the table reflect the relative quantities of goods and services consumed rather than their nominal cost. Table 4.12 provides the corresponding data on the structure of prices within countries.

Private consumption refers to private (that is, household) and nonprofit (nongovernmental) consumption as defined in the United Nations System of National Accounts (SNA). Estimates of private consumption of education and health services include government as well as private outlays. The International Comparison Programme's (ICP) concept of enhanced consumption, or total consumption of the population, focuses on who consumes goods and services rather than on who pays for them. That is, it emphasizes consumption rather than expenditure. This approach, adopted in the 1993 SNA, improves international comparability because aggregate measures based on consumption are less sensitive to differences in national practices in financing health and education services.

Because national statistical offices tend to concentrate on the production side of national accounts, data on the detailed structure of consumption in low- and middle-income economies are generally weak. Consumption estimates are typically obtained through household budget surveys or other, similar surveys. These surveys are carried out irregularly and may be targeted at specific income groups or geographic areas. In some countries surveys are limited to urban areas or even to capital cities and so do not reflect national spending patterns. Urban surveys tend to show lower-than-average shares for food and higher-than-average shares for gross rent, fuel and power, transport and communications, and other consumption. Controlled food prices and incomplete accounting of subsistence activities may also contribute to low measured shares of food consumption.

The ICP collects price data from different outlets on several hundred consumption items that are carefully reviewed to ensure comparability. ICP surveys are conducted about every five years, but because not all countries have participated in all surveys, regression methods are used to extrapolate results from earlier surveys and to provide a complete set of estimates in a given year. See Ahmad (1994) for an extensive discussion of the ICP and its methods.

Although PPPs are more useful than official exchange rates in comparing consumption patterns, caution should be used in interpreting PPP results. PPP estimates are based on price comparisons of comparable items, but not all items can be matched perfectly in quality across countries and over time. Services are particularly difficult to compare, in part because of differences in productivity. Many services, such as government services, are not sold on the open market in all countries, so they are compared using input prices (mostly wages). Because this approach ignores productivity differences, it may inflate estimates of real quantities in low-income countries.

Definitions

- **Private consumption** includes the consumption expenditures of individuals, households, and nongovernmental organizations. In the ICP, goods and services accruing to households are included in private consumption whether they are financed by individuals, governments, or nonprofit institutions. Thus private consumption as defined by the ICP includes government expenditures on education, health, social security, and welfare services.
- **Household consumption** shows the percentage shares of selected components of consumption computed from details of GDP converted using PPPs. • **All food** includes all food purchased for household consumption. • **Bread and cereals** comprise the main staple products—rice, flour, bread, all other cereals, and cereal preparations.
- **Clothing and footwear** include purchases of new and used clothing and footwear and repair services.
- **Fuel and power** exclude energy used for transport (rarely reported to be more than 1 percent of total consumption in low- and middle-income economies). • **Health care** and **education** include government as well as private expenditures.
- **Transport and communications** cover all personal costs of transport, telephones, and the like.
- **Other consumption** covers gross rent (including repair and maintenance charges); beverages and tobacco; nondurable household goods, household services, recreational services, services (including meals) supplied by hotels and restaurants, and purchases of carryout food; and consumer durables, such as household appliances, furniture, floor coverings, recreational equipment, and watches and jewelry.

Data sources

Purchasing Power of Currencies

PPP data come from the ICP, which is coordinated by the United Nations regional economic commissions and other international organizations. The World Bank collects detailed ICP benchmark data from regional sources, establishes global consistency across the regional data sets, and computes regression-based estimates for nonbenchmark countries. For detailed information on the regional sources and compilation of benchmark data see the World Bank's *Purchasing Power of Currencies: Comparing National Incomes Using ICP Data* (1993b).

Relative prices in PPP terms 4.12

	International price level		Relative price level (price level of GDP = 100)									
			Private consumption									
	ratio of PPP rate to $ exchange rate		Private consumption	All food	Bread and cereals	Clothing and footwear	Fuel and power	Health care	Education	Transport and communi-cations	Government consump-tion	Gross fixed capital formation
	1993	1997	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Antigua and Barbuda	83	84	106	105	107	178	187	116	43	154	63	112
Australia	95	104	100	77	97	113	75	88	83	102	93	105
Austria	118	115	100	102	97	108	101	92	82	115	90	102
Bahamas, The	117	..	100	90	93	103	112	111	94	166	112	93
Bangladesh	33	32	101	154	153	122	61	37	17	66	52	201
Belgium	108	104	101	95	89	125	114	72	80	110	90	102
Belize	63	65	95	90	80	75	167	80	71	118	79	128
Botswana	46	43	125	103	113	157	256	105	98	65	113	108
Bulgaria	31	30	85	128	136	103	62	58	21	149	70	133
Cameroon	53	34	93	87	98	102	173	88	60	97	123	141
Canada	97	88	103	96	93	101	77	110	104	109	115	85
Congo, Rep.	48	52	98	115	105	109	288	58	55	67	78	193
Côte d'Ivoire	52	39	98	101	112	97	..	89	60	78	116	151
Czech Republic	35	48	85	106	63	123	74	61	41	157	73	174
Denmark	137	135	105	108	107	104	130	111	85	123	90	87
Dominica	73	75	101	112	125	98	179	58	60	147	62	147
Egypt, Arab Rep.	33	41	90	88	97	124	80	54	49	92	92	106
Fiji	58	64	90	100	112	124	146	89	66	140	59	170
Finland	104	115	108	121	138	112	79	99	79	126	82	85
France	113	107	101	102	95	124	124	71	94	116	101	97
Gabon	63	59	126	147	95	131	284	90	119	79	152	91
Germany	126	119	99	90	91	107	106	84	96	110	104	103
Greece	81	91	105	104	126	161	149	80	68	98	74	98
Grenada	65	66	96	120	110	109	191	47	53	189	65	142
Guinea	33	30	97	106	118	75	173	37	68	94	80	127
Hong Kong, China	95	107	91	76	78	73	57	59	145	80	136	106
Hungary	63	62	66	74	78	87	50	50	29	122	84	114
Iceland	122	..	103	120	109	136	42	89	68	115	87	94
Indonesia	32	30	93	93	82	99	98	38	31	89	34	163
Ireland	100	98	100	101	90	106	110	100	61	146	85	104
Italy	97	97	99	105	100	125	122	82	102	108	105	101
Jamaica	48	47	101	119	100	118	181	57	64	85	69	111
Japan	163	137	99	130	135	113	111	61	83	90	86	104
Kenya	21	30	90	91	123	85	140	45	41	71	72	196
Korea, Rep.	76	70	112	137	173	157	66	61	72	53	95	87
Luxembourg	123	..	95	93	84	128	86	80	109	97	119	109
Malawi	36	34	87	98	109	54	148	31	50	73	79	279
Mali	45	33	90	92	131	86	..	59	31	90	63	179
Mauritius	39	41	93	81	65	72	111	59	87	67	108	134
Moldova	47	29	87	131	127	102	60	62	41	122	88	137
Morocco	36	37	93	83	77	68	282	81	81	77	106	182
Nepal	20	20	93	129	129	116	94	25	30	61	61	..
Netherlands	115	108	97	92	79	101	100	71	86	119	92	112
New Zealand	82	98	98	91	93	102	65	96	74	100	78	119
Nigeria	23	37	101	150	171	58	56	46	40	47	61	115
Norway	138	141	106	117	114	108	50	97	87	139	98	88
Pakistan	32	31	101	115	103	133	113	35	60	108	42	167
Philippines	27	31	82	105	124	122	277	30	29	114	58	183
Portugal	71	71	107	125	102	162	175	117	54	140	56	116
Romania	31	36	82	132	74	106	59	59	22	116	78	132
Russian Federation	52	69	84	122	61	154	2	36	30	75	79	145
Senegal	33	30	90	87	119	74	227	75	45	79	81	237
Sierra Leone	33	42	115	141	192	107	185	34	39	76	37	147
Singapore	98	108	95	67	72	88	46	46	86	100	88	107
Slovak Republic	38	45	80	87	55	111	68	53	33	123	74	124

4.12 Relative prices in PPP terms

	International price level		Relative price level (price level of GDP = 100)									
			Private consumption									
	ratio of PPP rate to $ exchange rate		Private consumption	All food	Bread and cereals	Clothing and footwear	Fuel and power	Health care	Education	Transport and communi-cations	Government consump-tion	Gross fixed capital formation
	1993	1997	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Slovenia	68	77	93	108	104	146	71	70	55	110	76	109
Spain	91	84	102	100	112	120	111	83	76	125	85	102
Sri Lanka	30	32	86	123	109	113	58	26	33	53	31	170
St. Kitts and Nevis	76	80	95	105	118	108	121	47	81	145	69	129
St. Lucia	69	73	101	111	140	107	157	49	61	114	77	111
St. Vincent and the Grenadines	59	59	97	132	125	113	236	43	55	146	56	173
Swaziland	37	41	92	84	100	138	187	53	66	54	91	..
Sweden	125	129	103	103	103	86	86	103	86	110	93	93
Switzerland	146	141	106	108	96	102	70	89	102	106	115	85
Thailand	41	38	122	106	79	158	74	40	71	103	68	93
Trinidad and Tobago	63	65	98	89	98	87	38	106	98	108	87	129
Tunisia	38	38	92	81	62	142	105	80	109	79	124	159
Turkey	55	47	106	123	100	140	141	75	53	116	62	106
United Kingdom	94	104	102	86	73	83	115	89	89	126	90	98
United States	100	100	100	88	82	84	90	145	125	89	113	94
Zambia	40	42	113	126	185	98	282	29	46	89	34	213
Zimbabwe	31	33	105	81	97	91	221	51	77	62	89	..

Relative prices in PPP terms 4.12

About the data

The International Comparison Programme (ICP) collects data on prices paid for a large set of comparable items in more than 100 countries. Purchasing power parities (PPPs) computed from these data allow comparisons of prices and real GNP expenditures across countries. PPPs are used in table 1.1 to measure GNP at internationally comparable prices and in table 4.11 to evaluate the structure of consumption. This table presents information on the relative prices of components of GDP based on the most recent ICP data.

A country's international price level is the ratio of its PPP rate to its official exchange rate for U.S. dollars. PPPs can be thought of as the exchange rate of dollars for goods in the local economy, while the U.S. dollar exchange rate measures the relative cost of domestic currency in dollars. Thus the international price level is an index measuring the cost of goods in one country at the current rate of exchange relative to a numeraire country, in this case the United States. An international price level above 100 means that the general price level in the country is higher than that in the United States. For example, Japan's international price level of 137 in 1997 implies that the price of goods and services in Japan is 37 percent higher than the price of comparable goods and services in the United States. By contrast, Kenya's price level of 30 means that a bundle of goods and services purchased for $100 in the United States costs only $30 in Kenya.

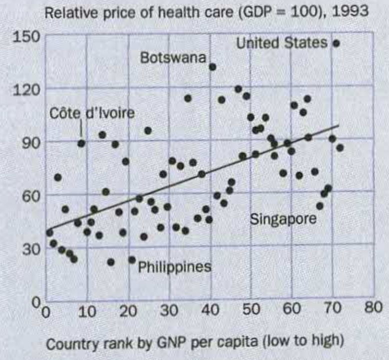
The first two columns of the table present international price levels for 1993 and 1997. Price levels for a country can be higher in 1997 than in 1993 if the rate of inflation in the country over the period is higher than in the United States and if the exchange rate does not depreciate enough to offset the relative rate of inflation. Countries experiencing a fall in the price level are those that allowed their exchange rates to depreciate more than the relative rate of inflation.

The relative prices of components of GDP shown in the table are calculated from their international prices measured relative to each country's price level of GDP. A figure above 100 indicates that the price of that component is higher than the average price level of GDP. This is not the same as saying that the component is more expensive in that country than in the United States. It indicates only that the price for that component is higher than the general price level prevailing in the country.

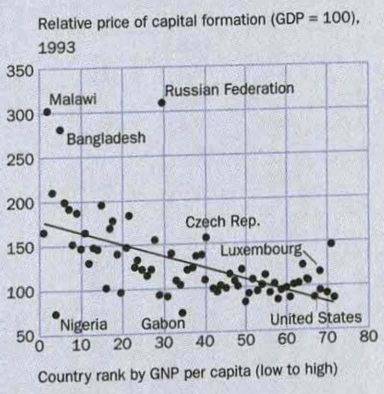
Relative prices for consumption items tend to be close to the overall price level of GDP. This is to be expected because consumption accounts for a large share of GDP. The data also indicate that the relative price of investment goods in developing countries tends to be higher than for other components of GDP. For example, Indonesia's relative price level of 163 indicates that the price level of investment goods is 63 percent higher than the overall price level. This reflects the fact that a large share of physical capital must be imported from high-income economies with higher price levels.

Figure 4.12

Health care services are relatively expensive in high-income economies . . .



. . . but capital investment is far more expensive in low- and middle-income economies



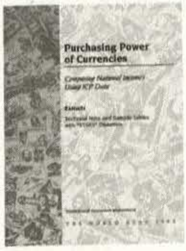
Source: World Bank staff estimates.

Price levels measured using purchasing power parities demonstrate the systematic differences in the relative prices of services and capital goods in industrial and developing economies.

Definitions

- **International price level** is the ratio of a country's PPP rate to its official exchange rate for U.S. dollars. • **Private consumption** includes the consumption expenditures of individuals, households, and nongovernmental organizations. • **All food** includes all food purchased for household consumption. • **Bread and cereals** comprise the main staple products—rice, flour, bread, all other cereals, and cereal preparations. • **Clothing and footwear** include purchases of new and used clothing and footwear and repair services. • **Fuel and power** exclude energy used for transport (rarely reported to be more than 1 percent of total consumption in low- and middle-income economies). • **Health care** and **education** include government as well as private expenditures. • **Transport and communications** cover all personal costs of transport, telephones, and the like. • **Government consumption** includes spending on goods and services for collective consumption less spending on recreational and other related cultural services, education, health, and housing. Expenditure on government final consumption consists of compensation of employees, consumption of intermediate goods and services, and consumption of fixed capital and indirect taxes paid less proceeds from sales of goods and services to other sectors (such as fees charged by municipalities and other government agencies, school fees, fees for medical and hospital treatment and drug sales, and sales of maps and charts). • **Gross fixed capital formation** comprises expenditures on construction, producer durables, and changes in stocks. Construction includes residential and nonresidential buildings and roads, bridges, and other civil engineering activities. Producer durables include machinery and nonelectrical equipment, electrical machinery and appliances, and transport equipment. Changes in stocks cover increases in the value of materials and supplies, works in progress, and livestock (including breeding stock and dairy cattle).

Data sources



PPP data come from the ICP, which is coordinated by the United Nations regional economic commissions and other international organizations. The World Bank collects detailed ICP benchmark data from regional sources, establishes global consistency across the regional data sets, and computes regression-based estimates for nonbenchmark countries.

4.13 Central government finances

	Current revenue[a]		Total expenditure		Overall budget deficit (including grants)		Financing from abroad		Domestic financing		Debt and interest payments	
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP		Total debt % of GDP	Interest % of current revenue
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1996	1996
Albania	..	*21.2*	..	*31.0*	..	*–9.0*	..	*1.9*	..	*7.1*	35.3	*10.8*
Algeria	..	32.7	..	29.7	..	3.0	..	4.0	..	–7.0	65.2	*10.4*
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	15.6	11.9	18.2	14.0	–2.6	–2.0	0.0	2.8	2.6	–0.8	..	13.0
Armenia	..	..	..	..	..	..	..	..	..	..	..	..
Australia	21.7	24.3	22.7	26.3	–1.5	–0.9	0.2	1.5	1.3	–0.6	22.3	7.4
Austria	33.9	37.2	36.6	41.7	–3.3	–4.1	0.8	0.5	2.5	3.6	..	10.7
Azerbaijan	..	..	..	..	..	..	..	..	..	..	..	..
Bangladesh	8.4	..	7.4	..	1.8	..	1.8	..	*0.5*	..	..	..
Belarus	..	31.8	..	33.9	..	–1.9	..	–0.1	..	2.0	12.0	2.1
Belgium	43.0	*44.1*	50.1	*48.2*	–8.0	*–3.2*	2.4	*–3.3*	5.7	*6.5*	*126.0*	*19.5*
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Bolivia	..	16.9	..	22.8	..	–2.3	..	3.6	..	–1.3	47.1	11.4
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	31.8	49.4	31.8	39.4	–0.2	9.4	1.3	0.6	–1.2	–10.0	12.3	1.3
Brazil	22.6	*27.0*	20.2	*33.8*	–2.4	*–6.1*	*0.0*	..	*2.4*	..	..	*47.9*
Bulgaria	..	32.5	..	48.1	..	–15.4	..	–1.9	..	17.3	..	62.0
Burkina Faso	11.8	..	12.2	..	0.2	..	0.4	..	0.0	..	*74.9*	..
Burundi	13.9	17.0	21.5	27.7	–3.9	–7.8	2.0	4.8	1.9	3.0	139.1	9.5
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	16.4	*13.0*	15.7	*12.7*	0.5	*0.2*	0.7	*0.3*	–1.2	*–0.3*	*139.6*	*23.0*
Canada	18.5	*20.6*	21.1	*24.2*	–3.5	*–3.7*	0.6	..	2.9	..	..	*21.3*
Central African Republic	*16.5*	..	*22.0*	..	*–3.5*	..	*2.1*	..	*1.5*	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	32.0	23.2	28.0	21.0	5.4	2.3	–0.8	..	–4.7	..	16.6	2.5
China	..	5.5	..	8.0	..	–1.6	..	0.1	..	1.5	..	..
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	12.0	*16.3*	13.4	..	–1.8	..	..	..	..	..	..	..
Congo, Dem. Rep.	9.4	*5.3*	12.4	*8.3*	–0.8	*0.0*	0.3	*0.0*	0.5	*0.0*	*232.9*	*1.0*
Congo, Rep.	35.3	..	49.4	..	–5.2	..	3.8	..	1.4	..	..	..
Costa Rica	17.8	26.7	25.0	30.6	–7.4	–3.9	1.1	*–1.1*	6.3	*4.0*	*0.0*	22.8
Côte d'Ivoire	22.9	..	31.7	..	–10.8	..	6.5	..	4.4	..	..	..
Croatia	..	45.5	..	46.7	..	–0.5	..	0.9	..	–0.4	..	2.6
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	35.0	..	36.4	..	0.0	..	–0.8	..	0.8	11.5	3.1
Denmark	34.7	*38.8*	38.6	*41.4*	–2.6	*–1.9*	..	..	..	..	..	*14.0*
Dominican Republic	14.2	15.1	16.9	15.6	–2.6	–0.3	1.4	–1.0	1.2	1.3	26.9	3.8
Ecuador	12.8	*15.7*	14.2	*15.7*	–1.4	*0.0*	0.5	..	0.9	..	..	*21.8*
Egypt, Arab Rep.	44.1	*35.4*	50.3	*34.3*	*–11.7*	*0.9*	3.6	*–0.9*	8.0	*0.0*	..	*20.3*
El Salvador	..	..	..	..	..	..	..	..	..	..	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	32.6	..	33.8	..	–0.7	..	0.4	..	0.3	..	1.2
Ethiopia[b]	*16.6*	..	*19.9*	..	*–3.1*	..	*1.2*	..	*1.9*	..	..	..
Finland	27.2	33.4	28.1	40.1	–2.2	–6.3	0.8	0.1	1.4	6.3	68.8	15.6
France	39.6	41.6	39.5	46.9	–0.1	–5.3	0.0	0.2	0.1	5.1	..	7.7
Gabon	35.5	..	36.5	..	6.1	..	0.0	..	–6.1	..	..	..
Gambia, The	23.1	..	31.7	..	–4.4	..	1.2	..	3.2	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..
Germany	..	31.3	..	33.7	..	–2.1	..	1.5	..	0.6	38.8	7.7
Ghana	6.9	..	10.9	..	–4.2	..	0.7	..	3.5	..	..	..
Greece	25.3	21.6	29.3	32.8	–4.1	–8.6	1.6	2.4	2.6	6.2	119.2	54.2
Guatemala	11.2	..	14.3	..	–3.9	..	1.5	..	2.4	..	..	..
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	10.6	..	17.4	..	–4.7	..	..	..	..	..	..	..
Honduras	14.6	..	..	..	..	..	..	..	..	..	..	..

Central government finances 4.13

	Current revenue[a]		**Total expenditure**		**Overall budget deficit (including grants)**		**Financing from abroad**		**Domestic financing**		**Debt and interest payments**	
											Total debt % of GDP	Interest % of current revenue
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP			
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1996**	**1996**
Hungary	*53.4*	39.6	*56.2*	43.2	*–2.8*	0.1	*2.1*	–0.4	*0.7*	0.3	*71.9*	20.3
India	11.7	13.6	13.3	15.8	–6.5	–5.2	0.5	0.2	6.0	5.0	49.3	31.0
Indonesia	21.3	17.0	22.1	14.6	–2.3	1.2	2.1	–0.5	0.2	–0.7	23.9	7.1
Iran, Islamic Rep.	21.6	*24.5*	35.7	*23.2*	–13.8	*1.4*	–0.6	*0.0*	14.4	*–1.4*	..	0.0
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	34.7	*34.0*	45.1	*38.1*	–12.5	*–1.4*	..	..	..	..	..	*14.5*
Israel	52.2	40.3	72.8	48.7	–16.2	–4.3	8.2	1.8	8.1	2.4	118.8	15.3
Italy	31.4	42.7	41.3	49.5	–10.8	–7.1	0.2	..	10.6	..	..	23.8
Jamaica	29.0	..	41.5	..	–15.5	..	..	..	..	..	..	..
Japan	11.6	..	18.4	..	–7.0	..	..	..	6.7	..	..	..
Jordan	17.9	28.6	41.3	35.0	–9.3	–1.4	5.7	4.1	3.6	–2.7	93.4	11.2
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kenya	21.9	27.1	25.3	28.9	–4.5	–0.9	2.4	–0.2	2.1	1.1	..	27.9
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	17.7	21.3	17.2	18.6	–2.2	0.1	0.9	–0.1	1.4	0.0	8.6	2.3
Kuwait	89.3	..	27.7	45.2	58.7	..	..	..	..	..	..	..
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	..	29.8	..	31.0	..	–1.7	..	0.7	..	0.9	14.4	5.6
Lebanon	..	17.3	..	37.9	..	–20.6	..	4.2	..	16.3	98.9	75.1
Lesotho	*34.2*	55.0	*45.3*	55.2	*–7.4*	5.0	*2.6*	9.5	*4.8*	–14.5	..	3.3
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	..	22.5	..	25.0	..	–3.6	..	3.2	..	0.4	..	4.1
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	13.2	8.7	..	17.3	..	–1.3	..	1.4	..	–0.1	*119.8*	54.0
Malawi	19.1	..	34.6	..	–15.9	..	8.3	..	7.7	..	..	..
Malaysia	26.3	24.9	28.5	21.9	–6.0	2.0	0.6	–0.9	5.4	–1.0	..	11.0
Mali	10.5	..	20.6	..	–4.5	..	4.1	..	0.4	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	20.8	18.8	27.2	22.4	–10.3	–4.0	2.5	3.1	7.8	0.9	36.8	13.5
Mexico	15.1	15.4	15.7	15.5	–3.0	–0.2	–0.4	–0.7	3.4	1.0	31.5	18.8
Moldova	..	..	..	..	..	..	..	..	..	..	..	..
Mongolia	..	24.1	..	21.6	..	–6.6	..	5.3	..	1.3	51.3	3.0
Morocco	23.3	*28.5*	33.1	*33.3*	–9.7	*–4.4*	5.3	*–0.7*	4.4	*5.1*	*79.4*	*20.5*
Mozambique	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	16.0	6.9	15.8	10.1	1.2	–3.2	1.2	0.0	–2.4	3.2	..	..
Namibia	..	..	..	..	..	..	..	..	..	..	..	..
Nepal	7.8	10.7	14.3	17.5	–3.0	–4.4	1.9	3.0	1.2	1.4	65.2	14.5
Netherlands	49.4	45.1	52.9	48.0	–4.6	–2.3	0.0	–1.5	4.6	3.8	62.8	10.0
New Zealand	34.2	35.3	38.3	31.9	–6.7	5.1	3.6	..	3.1	..	..	10.0
Nicaragua	23.3	*25.4*	30.4	*33.2*	–6.8	*–0.6*	3.6	*0.2*	3.2	*0.5*	..	*15.5*
Niger	14.6	..	18.6	..	–4.8	..	4.1	..	0.7	..	..	..
Nigeria	..	..	..	..	..	..	..	..	..	..	..	..
Norway	37.2	41.7	34.4	36.8	–1.7	5.1	–0.7	–1.6	2.4	–3.5	24.5	5.1
Oman	38.2	*31.7*	38.5	*42.4*	0.4	*–10.1*	–3.6	*9.1*	3.1	*1.0*	*31.3*	7.6
Pakistan	16.2	17.1	17.5	23.8	–5.7	–7.8	2.3	1.9	3.4	5.9	..	34.0
Panama	25.3	25.9	30.5	27.4	–5.2	–0.7	5.4	0.7	–0.2	0.0	..	15.3
Papua New Guinea	23.0	*22.0*	34.4	*29.4*	–1.9	*–4.1*	2.5	*–0.2*	–0.5	*4.3*	..	*12.2*
Paraguay	10.7	..	9.9	..	0.3	..	2.2	..	–2.5	..	..	..
Peru	17.1	16.0	19.5	16.5	–2.4	2.3	0.6	0.7	1.8	–3.0	*45.9*	13.6
Philippines	14.0	18.6	13.4	18.5	–1.4	0.3	0.9	–0.3	0.5	0.0	53.2	18.7
Poland	..	39.7	..	42.2	..	–2.2	..	–0.2	..	2.4	51.1	9.9
Portugal	26.0	34.1	33.1	41.6	–8.4	–2.3	1.9	2.2	6.5	0.0	1.8	12.8
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	45.3	27.8	44.8	31.4	0.5	–4.0	..	*0.0*	..	*2.5*	..	5.8
Russian Federation	..	*19.0*	..	*24.7*	..	*–4.5*	..	*1.5*	..	*3.0*	..	*15.8*

4.13 Central government finances

	Current revenue[a]		Total expenditure		Overall budget deficit (including grants)		Financing from abroad		Domestic financing		Debt and interest payments	
	% of GDP		% of GDP		% of GDP		% of GDP		% of GDP		Total debt % of GDP	Interest % of current revenue
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1996	1996
Rwanda	12.8	..	14.3	..	–1.7	..	2.6	..	–0.9	..	..	..
Saudi Arabia	..	..	..	..	..	..	..	..	..	..	..	..
Senegal	24.3	..	23.3	..	*0.9*	..	–2.7	..	1.8	..	..	..
Sierra Leone	15.1	8.0	26.5	14.8	–11.8	–5.8	3.5	2.8	8.3	2.9	116.2	23.0
Singapore	25.4	29.0	20.0	21.0	2.1	10.4	–0.2	0.0	–2.0	–10.4	75.5	2.2
Slovak Republic	..	..	..	..	..	..	..	..	..	..	..	..
Slovenia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	23.5	28.8	22.1	34.7	–2.3	–5.8	–0.2	0.2	2.5	5.5	..	21.7
Spain	24.0	*30.4*	26.5	*36.8*	–4.2	*–6.0*	0.0	*2.5*	4.2	*3.5*	*55.2*	*14.9*
Sri Lanka	20.2	19.0	41.4	27.7	–18.3	–7.8	4.5	1.3	13.8	6.5	92.3	33.4
Sudan	12.3	..	17.4	..	–2.9	..	2.5	..	0.4	..	..	..
Sweden	35.0	41.6	39.3	46.1	–8.1	–4.3	3.2	1.8	4.9	2.5	..	14.0
Switzerland	18.6	22.7	19.2	26.3	–0.2	–1.2	..	0.0	..	1.2	24.2	3.8
Syrian Arab Republic	26.8	23.2	48.2	23.8	–9.7	–0.2	–0.2	..	9.8	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	..	..	..	..	..	..	..	..	..	..	..	..
Thailand	14.3	19.0	18.8	16.5	–4.9	2.4	1.1	0.1	3.7	–2.4	3.7	1.2
Togo	30.3	..	30.8	..	–2.0	..	1.6	..	0.4	..	..	..
Trinidad and Tobago	43.2	*27.3*	30.9	*28.3*	7.4	*0.2*	..	*2.6*	..	*–2.8*	*51.7*	*17.8*
Tunisia	31.3	29.6	31.6	32.6	–2.8	–3.1	2.3	2.8	0.5	0.4	55.3	13.3
Turkey	18.1	18.3	21.3	26.9	–3.1	–8.4	0.4	–0.9	2.6	9.3	37.9	18.2
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	3.2	..	6.2	..	–3.1	..	0.0	..	3.1	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	0.2	*2.5*	12.1	*11.8*	2.1	*0.2*	0.0	*0.0*	–2.1	*–0.2*	..	*0.0*
United Kingdom	35.2	*36.2*	38.3	*41.7*	–4.6	*–5.3*	0.3	..	4.3	..	..	*10.2*
United States	20.2	20.7	22.0	22.2	–2.8	–1.6	0.0	2.5	2.8	–0.9	51.1	16.5
Uruguay	22.3	29.7	21.8	31.4	0.0	–1.6	0.9	*1.1*	–0.9	*1.7*	*26.3*	4.4
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	22.3	19.7	18.7	16.9	0.0	1.4	1.8	–0.5	–1.9	–0.8	..	19.1
Vietnam	..	..	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	32.5	..	32.8	..	–2.7	..	0.8	..	1.8	..	8.8
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	25.0	18.6	37.1	21.4	–18.5	0.7	8.8	1.2	9.7	–1.9	..	*8.7*
Zimbabwe	19.3	..	27.9	..	–8.8	..	1.8	..	6.9	..	..	..
World	22.2 w	*26.6* w	25.4 w	*29.8* w	–4.2 w	*–3.1* w	.. m	.. m	2.6 m	.. m	.. m	*12.1* m
Low income	12.9	14.4	14.8	17.4	..	–5.6	..	..	..	..	..	..
Middle income	..	*17.9*	..	*19.9*	..	*–3.3*	..	*0.4*	..	*0.3*	..	11.1
Lower middle income	..	*15.3*	..	*17.1*	..	..	..	*0.3*	..	*0.3*	..	*10.4*
Upper middle income	20.8	*24.1*	20.1	*27.9*	–2.2	*–3.4*	0.9	0.0	1.6	0.6	*32.6*	11.0
Low & middle income	..	*17.4*	..	*19.5*	..	*–3.6*	..	..	..	..	..	..
East Asia & Pacific	..	11.0	..	11.6	..	..	1.2	0.0	0.3	0.0	..	*11.5*
Europe & Central Asia	..	*25.5*	..	*29.9*	..	*–3.6*	..	..	..	..	..	..
Latin America & Carib.	19.8	*21.6*	19.1	*25.6*	–2.0	*–3.3*	1.1	..	1.2	..	..	*14.7*
Middle East & N. Africa	..	..	..	..	..	..	2.3	*1.5*	4.4	*0.3*	..	*12.4*
South Asia	12.3	14.3	14.3	17.4	..	–5.8	2.1	1.6	4.7	5.5	65.2	32.2
Sub-Saharan Africa	21.3	..	22.5	..	–3.6	..	2.4	..	1.9	..	..	..
High income	22.7	*28.7*	26.2	*32.1*	–4.3	*–3.3*	0.4	0.5	2.9	1.2	..	10.0
Europe EMU	..	37.5	..	41.7	..	–4.2	0.5	0.3	4.4	3.7	*59.4*	10.7

a. Excluding grants. b. Data prior to 1992 include Eritrea.

Central government finances 4.13

About the data

Tables 4.13–4.15 present an overview of the size and role of central governments relative to national economies. The International Monetary Fund's (IMF) *Manual on Government Finance Statistics* describes the government as the sector of the economy responsible for "implementation of public policy through the provision of primarily nonmarket services and the transfer of income, supported mainly by compulsory levies on other sectors" (1986, p. 3).

Data on government revenues and expenditures are collected by the IMF through questionnaires distributed to member governments and by the Organisation for Economic Co-operation and Development (OECD). Despite the IMF's efforts to systematize and standardize the collection of public finance data, statistics on public finance are often incomplete, untimely, and noncomparable.

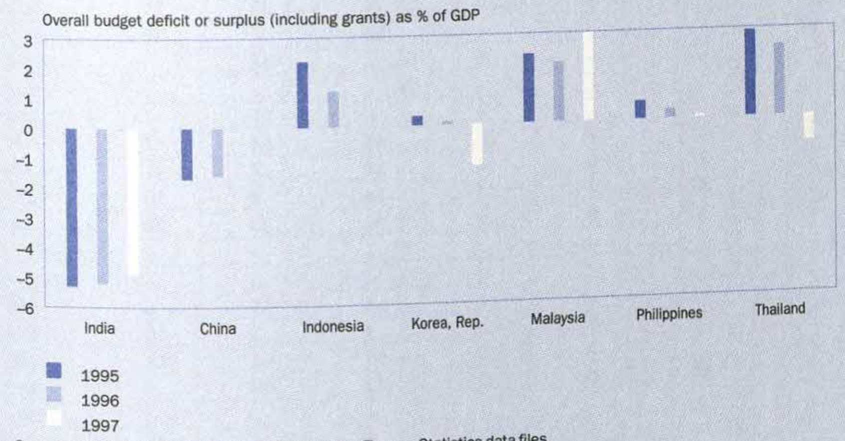
In general, the definition of government excludes nonfinancial public enterprises and public financial institutions (such as the central bank). Units of government meeting this definition exist at many levels, from local administrative units to the highest level of national government. Inadequate statistical coverage precludes the presentation of subnational data, however, making cross-country comparisons potentially misleading.

Central government can refer to one of two accounting concepts: consolidated or budgetary. For most countries central government finance data have been consolidated into one account, but for others only budgetary central government accounts are available. Countries reporting budgetary data are noted in *Primary data documentation.* Because budgetary accounts do not necessarily include all central government units, the picture they provide of central government activities is usually incomplete. A key issue is the failure to include the quasi-fiscal operations of the central bank. Central bank losses arising from monetary operations and subsidized financing can result in sizable quasi-fiscal deficits. Such deficits may also result from the operations of other financial intermediaries, such as public development finance institutions. Also missing from the data are governments' contingent liabilities for unfunded pension and insurance plans.

Government finance statistics are reported in local currency. The indicators here are shown as percentages of GDP. Many countries report government finance data according to fiscal years; see *Primary data documentation* for the timing of these years. For further discussion of government finance statistics see *About the data* for tables 4.14 and 4.15.

Figure 4.13

Worsening fiscal balances in most of East Asia



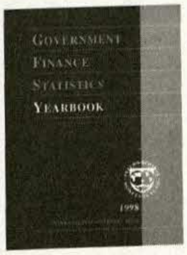
Source: International Monetary Fund, Government Finance Statistics data files.

Except for Malaysia, the East Asian countries in financial crisis showed declining fiscal surpluses or emerging deficits in 1995–97. By contrast, India and China reduced their deficits slightly.

Definitions

• **Current revenue** includes all revenue from taxes and current nontax revenues (other than grants) such as fines, fees, recoveries, and income from property or sales. • **Total expenditure** includes nonrepayable current and capital expenditure. It does not include government lending or repayments to the government or government acquisition of equity for public policy purposes. • **Overall budget deficit** is current and capital revenue and official grants received, less total expenditure and lending minus repayments. • **Financing from abroad** (obtained from nonresidents) and **domestic financing** (obtained from residents) refer to the means by which a government provides financial resources to cover a budget deficit or allocates financial resources arising from a budget surplus. It includes all government liabilities—other than those for currency issues or demand, time, or savings deposits with government—or claims on others held by government and changes in government holdings of cash and deposits. Government guarantees of the debt of others are excluded. • **Debt** is the entire stock of direct, government, fixed term contractual obligations to others outstanding at a particular date. It includes domestic debt (such as debt held by monetary authorities, deposit money banks, nonfinancial public enterprises, and households) and foreign debt (such as debt to international development institutions and foreign governments). It is the gross amount of government liabilities not reduced by the amount of government claims against others. Because debt is a stock rather than a flow, it is measured as of a given date, usually the last day of the fiscal year. • **Interest** includes interest payments on government debt—including long-term bonds, long-term loans, and other debt instruments—to both domestic and foreign residents.

Data sources



Data on central government finances are from the IMF's *Government Finance Statistics Yearbook, 1998* and IMF data files. Each country's accounts are reported using the system of common definitions and classifications found in the IMF's *Manual on Government Finance Statistics* (1986). See these sources for complete and authoritative explanations of concepts, definitions, and data sources.

4.14 Central government expenditures

	Goods and services		Wages and salaries[a]		Interest payments		Subsidies and other current transfers		Capital expenditure	
	% of total expenditure		% of total expenditure		% of total expenditure		% of total expenditure		% of total expenditure	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Albania	..	*26*	..	*12*	..	*8*	..	*48*	..	*18*
Algeria	..	*35*	..	*24*	..	*10*	..	*26*	..	26
Angola	..	..	..	..	..	..	..	..	..	..
Argentina	57	21	..	16	0	11	43	59	..	8
Armenia	..	..	..	..	..	..	..	..	..	..
Australia	22	21	..	..	7	7	65	69	7	3
Austria	26	24	11	9	5	10	60	59	9	7
Azerbaijan	..	..	..	..	..	..	..	..	..	..
Bangladesh	..	..	..	..	..	..	..	..	..	..
Belarus	..	29	..	8	..	2	..	54	..	15
Belgium	23	*18*	16	*15*	10	*18*	59	*59*	8	*5*
Benin	..	..	..	..	..	..	..	..	..	..
Bolivia	..	36	..	17	..	9	..	34	..	22
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	47	48	29	25	2	2	19	31	32	19
Brazil	20	*13*	16	*8*	8	*44*	64	*44*	8	*3*
Bulgaria	..	19	..	4	..	42	..	36	..	3
Burkina Faso	67	..	..	..	3	..	13	..	19	..
Burundi	*39*	47	*25*	29	*2*	6	*7*	12	*46*	28
Cambodia	..	..	..	..	..	..	..	..	..	..
Cameroon	55	*53*	32	*37*	1	*23*	11	*13*	33	*8*
Canada	22	..	10	..	12	*18*	65	..	1	*0*
Central African Republic	*67*	..	*54*	..	*1*	..	*16*	..	*6*	..
Chad	..	..	..	..	..	..	..	..	..	..
Chile	41	29	29	19	3	3	46	52	10	17
China	..	..	..	..	..	..	..	..	..	..
Hong Kong, China	..	..	..	..	..	..	..	..	..	..
Colombia	36	..	23	..	4	..	38	..	31	..
Congo, Dem. Rep.	65	*94*	42	*58*	8	*1*	8	*2*	20	*3*
Congo, Rep.	..	..	..	..	..	..	..	..	*45*	..
Costa Rica	53	47	44	35	9	20	24	23	21	10
Côte d'Ivoire	39	..	28	..	8	..	13	..	28	..
Croatia	..	52	..	23	..	3	..	34	..	12
Cuba	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	15	..	8	..	3	..	71	..	11
Denmark	22	*19*	13	*11*	7	*13*	65	*64*	7	*4*
Dominican Republic	50	36	39	27	6	4	12	17	31	41
Ecuador	28	*47*	26	*42*	9	*22*	34	*9*	16	*21*
Egypt, Arab Rep.	39	*34*	19	*18*	8	*22*	32	*25*	21	*19*
El Salvador	..	..	..	..	..	..	..	..	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..
Estonia	..	44	..	13	..	1	..	46	..	9
Ethiopia[b]	86	..	36	..	3	..	4	..	15	..
Finland	22	18	11	7	2	13	66	65	11	4
France	30	24	20	16	2	7	62	65	5	4
Gabon	..	..	..	..	..	..	..	..	..	..
Gambia, The	46	..	23	..	1	..	4	..	48	..
Georgia	..	..	..	..	..	..	..	..	..	..
Germany[c]	34	32	9	8	3	7	55	57	7	4
Ghana	48	..	27	..	16	..	26	..	10	..
Greece	45	29	29	24	8	36	35	22	16	13
Guatemala	53	..	37	..	4	..	8	..	38	..
Guinea	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..
Haiti	*82*	..	..	..	*2*	..	*5*	..	20	..
Honduras	..	..	..	..	..	..	..	..	..	..

Central government expenditures 4.14

	Goods and services		Wages and salaries[a]		Interest payments		Subsidies and other current transfers		Capital expenditure	
	% of total expenditure		% of total expenditure		% of total expenditure		% of total expenditure		% of total expenditure	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Hungary	*20*	17	*7*	8	*3*	19	*64*	60	*13*	9
India	29	23	14	10	13	27	47	39	12	11
Indonesia	25	30	15	16	4	8	24	21	47	41
Iran, Islamic Rep.	57	53	45	39	1	0	19	14	22	33
Iraq	..	..	..	..	..	..	..	..	..	..
Ireland	19	*18*	13	*13*	14	*13*	57	*60*	10	*10*
Israel	50	33	12	14	11	13	35	45	4	9
Italy	18	19	13	14	11	21	63	55	5	6
Jamaica	..	..	..	..	..	..	..	..	..	..
Japan	13	..	..	..	13	..	54	..	19	..
Jordan	43	59	..	44	3	9	17	11	29	20
Kazakhstan	..	..	..	..	..	..	..	..	..	..
Kenya	57	45	27	28	7	26	13	18	23	12
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	45	27	16	13	7	3	34	48	14	23
Kuwait	45	59	22	27	0	5	23	26	32	11
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..
Latvia	..	36	..	17	..	5	..	55	..	5
Lebanon	..	31	..	23	..	34	..	13	..	22
Lesotho	*50*	43	*34*	30	*10*	3	*13*	12	*27*	42
Libya	..	..	..	..	..	..	..	..	..	..
Lithuania	..	43	..	17	..	4	..	46	..	8
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..
Madagascar	..	25	..	18	..	27	..	8	..	39
Malawi	37	..	15	..	9	..	6	..	48	..
Malaysia	38	45	28	29	10	12	19	24	35	19
Mali	46	..	33	..	1	..	11	..	9	..
Mauritania	..	..	..	..	..	..	..	..	..	..
Mauritius	42	47	32	36	14	11	28	26	17	16
Mexico	32	26	25	17	11	19	32	43	32	12
Moldova	..	..	..	..	..	..	..	..	..	..
Mongolia	..	36	..	11	..	3	..	42	..	19
Morocco	47	*49*	33	*34*	7	*18*	15	*12*	31	*22*
Mozambique	..	..	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	24	54
Namibia	..	..	..	..	..	..	..	..	..	..
Nepal	..	..	..	..	..	9	..	..	..	..
Netherlands	16	16	11	9	4	9	72	71	9	4
New Zealand	29	49	21	..	10	11	55	37	6	2
Nicaragua	60	*30*	..	*19*	8	*12*	13	*25*	19	*33*
Niger	30	..	17	..	6	..	14	..	49	..
Nigeria	..	..	..	..	..	..	..	..	..	..
Norway	20	20	9	8	7	6	67	69	6	5
Oman	71	75	13	27	3	6	5	6	21	12
Pakistan	47	46	6	*4*	12	24	23	15	17	15
Panama	50	48	33	37	18	14	14	25	18	13
Papua New Guinea	58	*48*	37	*28*	5	*9*	23	*32*	15	*11*
Paraguay	61	..	34	..	3	..	12	..	24	..
Peru	45	38	..	16	18	13	14	33	23	16
Philippines	61	52	27	31	7	19	7	17	26	12
Poland	..	26	..	13	..	9	..	61	..	4
Portugal	34	40	24	30	8	11	45	37	13	13
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	11	33	2	16	0	5	55	51	33	11
Russian Federation	..	*40*	..	*14*	..	*13*	..	*49*	..	*5*

4.14 Central government expenditures

	Goods and services		Wages and salaries[a]		Interest payments		Subsidies and other current transfers		Capital expenditure	
	% of total expenditure		% of total expenditure		% of total expenditure		% of total expenditure		% of total expenditure	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Rwanda	58	..	30	..	2	..	5	..	35	..
Saudi Arabia	..	..	..	..	..	..	..	..	..	..
Senegal	72	..	45	..	6	..	18	..	8	..
Sierra Leone	..	35	..	19	..	13	..	31	*20*	25
Singapore	58	45	29	23	15	4	6	21	22	29
Slovak Republic	..	..	..	..	..	..	..	..	..	..
Slovenia	..	..	..	..	..	..	..	..	..	..
South Africa	47	30	20	*26*	8	18	31	49	14	3
Spain	40	*16*	32	*11*	1	*12*	48	*66*	11	*5*
Sri Lanka	31	38	13	18	8	23	20	22	40	18
Sudan	46	..	12	..	6	..	28	..	23	..
Sweden	17	14	8	5	7	13	71	71	5	3
Switzerland	27	27	6	5	3	3	63	66	7	4
Syrian Arab Republic	42	..	18	..	..	..	21	..	37	40
Tajikistan	..	..	..	..	..	..	..	..	..	..
Tanzania	52	..	19	..	7	..	4	..	40	..
Thailand	55	56	21	32	8	1	14	7	23	36
Togo	*52*	..	*28*	..	*9*	..	*12*	..	*27*	..
Trinidad and Tobago	34	*51*	28	*33*	3	*18*	24	*21*	39	*10*
Tunisia	42	38	29	32	5	12	24	29	30	21
Turkey	47	33	32	23	3	12	23	47	28	8
Turkmenistan	..	..	..	..	..	..	..	..	..	..
Uganda	..	..	..	..	..	..	..	..	13	..
Ukraine	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	80	87	..	*35*	0	*0*	12	*9*	8	*5*
United Kingdom	32	*30*	14	*9*	11	*9*	53	*56*	5	*5*
United States	29	22	11	9	10	15	54	59	6	3
Uruguay	47	29	30	16	2	4	43	61	8	5
Uzbekistan	..	..	..	..	..	..	..	..	..	..
Venezuela	50	20	41	16	8	22	22	44	22	14
Vietnam	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	46	..	34	..	9	..	26	..	17
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..
Zambia	55	45	27	23	9	*8*	25	15	11	33
Zimbabwe	56	..	31	..	7	..	32	..	5	..
World	45 m	*34* m	.. m	*19* m	7 m	*11* m	24 m	*37* m	18 m	*12* m
Low income	..	..	..	..	..	..	..	..	..	..
Middle income	47	36	..	18	*6*	9	23	34	24	13
Lower middle income	46	*39*	..	*26*	..	*11*	20	*25*	28	*19*
Upper middle income	47	30	*25*	18	3	11	31	46	21	12
Low & middle income	..	..	..	..	..	..	..	..	..	..
East Asia & Pacific	..	*45*	..	*27*	..	*11*	..	*18*	25	27
Europe & Central Asia	..	..	..	..	..	..	..	..	..	..
Latin America & Carib.	49	*32*	30	*20*	7	*11*	24	*29*	21	*14*
Middle East & N. Africa	43	*49*	..	*32*	..	*11*	19	*15*	29	21
South Asia	31	38	13	*10*	12	24	23	22	17	15
Sub-Saharan Africa	53	..	..	..	..	..	13	..	20	..
High income	28	25	13	11	7	10	56	58	7	5
Europe EMU	24	24	13	9	4	10	59	59	9	4

Note: Includes expenditures financed by grants in kind and other cash adjustments.

a. Part of goods and services. b. Data prior to 1992 include Eritrea. c. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Central government expenditures 4.14

About the data

Government expenditures include all nonrepayable payments, whether current or capital, requited or unrequited. Total central government expenditure as presented in the International Monetary Fund's (IMF) *Government Finance Statistics Yearbook* is a more limited measure of general government consumption than that shown in the national accounts (see table 4.10) because it excludes consumption expenditures by state and local governments. At the same time, the IMF's concept of central government expenditure is broader than the national accounts definition because it includes government gross domestic investment and transfer payments.

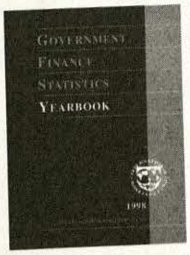
Expenditures can be measured either by function (education, health, defense) or by economic type (wages and salaries, interest payments, purchases of goods and services). Functional data are often incomplete, and coverage varies by country because functional responsibilities stretch across levels of government for which no data are available. Defense expenditures, which are usually the central government's responsibility, are shown in table 5.7. For more information on education expenditures see table 2.9; for more on health expenditures see table 2.13.

The classification of expenditures by economic type can also be problematic. For example, the distinction between current and capital expenditure may be arbitrary, and subsidies to state-owned enterprises or banks may be disguised as capital financing. Subsidies may also be hidden in special contractual pricing for goods and services. For further discussion of government finance statistics see *About the data* for tables 4.13 and 4.15.

Definitions

• **Total expenditure of the central government** includes both current and capital (development) expenditures and excludes lending minus repayments. • **Goods and services** include all government payments in exchange for goods and services, whether in the form of wages and salaries to employees or other purchases of goods and services. • **Wages and salaries** consist of all payments in cash, but not in kind, to employees in return for services rendered, before deduction of withholding taxes and employee contributions to social security and pension funds. • **Interest payments** are payments made to domestic sectors and to nonresidents for the use of borrowed money. (Repayment of principal is shown as a financing item, and commission charges are shown as purchases of services.) Interest payments do not include payments by government as guarantor or surety of interest on the defaulted debts of others, which are classified as government lending. • **Subsidies and other current transfers** include all unrequited, nonrepayable transfers on current account to private and public enterprises, and the cost to the public of covering the cash operating deficits on sales to the public by departmental enterprises. • **Capital expenditure** is spending to acquire fixed capital assets, land, intangible assets, government stocks, and nonmilitary, nonfinancial assets. Also included are capital grants.

Data sources



Data on central government expenditures are from the IMF's *Government Finance Statistics Yearbook, 1998* and IMF data files. Each country's accounts are reported using the system of common definitions and classifications found in the IMF's *Manual on Government Finance Statistics* (1986). See these sources for complete and authoritative explanations of concepts, definitions, and data sources.

4.15 Central government revenues

	Taxes on income, profit, and capital gains % of total current revenue		Social security taxes % of total current revenue		Taxes on goods and services % of total current revenue		Taxes on international trade % of total current revenue		Other taxes % of total current revenue		Nontax revenue % of total current revenue	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Albania	..	*8*	..	*15*	..	*38*	..	*14*	..	*1*	..	*21*
Algeria	..	68	..	0	..	10	..	15	..	1	..	5
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	0	13	17	30	17	39	0	7	33	4	33	7
Armenia	..	..	..	..	..	..	..	..	..	..	..	..
Australia	61	66	0	0	23	21	5	2	0	2	10	8
Austria	21	22	35	38	26	25	2	0	9	7	8	8
Azerbaijan	..	..	..	..	..	..	..	..	..	..	..	..
Bangladesh	10	..	0	..	25	..	29	..	4	..	32	..
Belarus	..	8	..	31	..	37	..	5	..	11	..	7
Belgium	38	*35*	31	*34*	24	*25*	0	*0*	2	*2*	4	*2*
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Bolivia	..	6	..	13	..	48	..	6	..	10	..	15
Bosnia and Herzegovina		..	..	..	..	..	..	..	..	..	..	.. ..
Botswana	33	17	0	0	1	4	39	12	0	0	27	66
Brazil	11	*12*	25	*27*	32	*21*	7	*2*	4	*4*	21	*22*
Bulgaria	..	19	..	21	..	26	..	7	..	2	..	25
Burkina Faso	18	..	8	..	16	..	44	..	4	..	11	..
Burundi	19	21	1	7	25	35	40	17	8	3	6	17
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	22	*17*	8	*0*	18	*25*	38	*28*	5	*3*	8	*27*
Canada	53	*48*	10	*19*	17	*19*	7	*2*	0	*0*	14	*11*
Central African Republic	*17*	..	*7*	..	*21*	..	*41*	..	*8*	..	*9*	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	17	19	17	6	35	46	4	9	6	4	19	15
China	..	12	..	0	..	68	..	8	..	2	..	10
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	25	*33*	11	*0*	23	*39*	21	*8*	7	*0*	14	*16*
Congo, Dem. Rep.	30	*33*	2	0	12	*19*	38	*33*	5	*8*	12	*8*
Congo, Rep.	39	..	4	..	6	..	10	..	2	..	19	..
Costa Rica	14	11	29	27	30	40	19	8	2	2	6	12
Côte d'Ivoire	12	..	5	..	24	..	41	..	6	..	7	..
Croatia	..	12	..	33	..	40	..	8	..	1	..	6
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	14	..	42	..	33	..	4	..	2	..	5
Denmark	35	*39*	2	*4*	46	*40*	0	*0*	3	*3*	11	*13*
Dominican Republic	19	16	4	4	21	33	31	36	2	1	22	8
Ecuador	45	*50*	0	*0*	17	*26*	31	*11*	3	*1*	4	*12*
Egypt, Arab Rep.	16	*16*	9	*10*	15	*13*	17	*10*	8	*9*	34	*38*
El Salvador	..	..	..	..	..	..	..	..	..	..	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	16	..	32	..	40	..	0	..	0	..	9
Ethiopia[a]	21	..	0	..	24	..	36	..	4	..	15	..
Finland	28	29	10	11	49	42	2	0	3	2	8	15
France	18	18	41	43	31	29	0	0	3	3	7	6
Gabon	37	..	0	..	4	..	18	..	2	..	31	..
Gambia, The	15	..	0	..	3	..	65	..	2	..	15	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..
Germany[b]	19	15	54	49	23	21	0	0	0	0	4	6
Ghana	20	..	0	..	28	..	44	..	0	..	7	..
Greece	17	32	26	2	32	60	5	0	10	7	11	10
Guatemala	11	..	11	..	26	..	30	..	11	..	10	..
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	14	..	0	..	15	..	48	..	9	..	13	..
Honduras	31	..	0	..	24	..	37	..	2	..	7	..

Central government revenues 4.15

	Taxes on income, profit, and capital gains		Social security taxes		Taxes on goods and services		Taxes on international trade		Other taxes		Nontax revenue	
	% of total current revenue		% of total current revenue		% of total current revenue		% of total current revenue		% of total current revenue		% of total current revenue	
	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996	1980	1996
Hungary	*18*	19	*15*	26	*38*	29	*7*	9	*5*	1	*16*	15
India	18	23	0	0	42	27	22	25	1	0	16	24
Indonesia	78	50	0	3	9	30	7	3	1	1	5	13
Iran, Islamic Rep.	4	11	7	6	4	5	12	6	5	4	68	68
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	34	*39*	13	*14*	30	*39*	9	*0*	2	*3*	11	*5*
Israel	41	36	10	11	25	34	4	0	8	4	14	14
Italy	30	33	35	35	25	24	0	0	4	3	8	5
Jamaica	34	..	4	..	49	..	3	..	6	..	4	..
Japan	71	..	0	..	21	..	2	..	5	..	5	..
Jordan	13	13	0	0	7	30	47	26	9	9	22	22
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kenya	29	34	0	0	39	37	19	15	1	1	13	14
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	22	29	1	9	45	33	15	6	3	10	12	13
Kuwait	2	..	0	..	0	..	1	..	0	..	97	..
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	..	7	..	32	..	42	..	2	..	0	..	16
Lebanon	..	7	..	0	..	4	..	46	..	24	..	19
Lesotho	*13*	15	*0*	0	*10*	12	*58*	49	*1*	0	*13*	24
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	..	13	..	31	..	48	..	3	..	0	..	4
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	14	18	10	0	33	24	23	53	2	2	2	2
Malawi	34	..	0	..	31	..	22	..	0	..	13	..
Malaysia	37	36	0	1	17	26	33	12	2	5	10	20
Mali	18	..	0	..	37	..	18	..	15	..	8	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	15	14	0	6	17	26	52	34	4	7	12	13
Mexico	34	27	12	13	50	57	7	4	3	2	7	16
Moldova	..	..	..	..	..	..	..	..	..	..	..	..
Mongolia	..	22	..	22	..	21	..	11	..	1	..	22
Morocco	19	*19*	5	*7*	34	*38*	20	*14*	7	*3*	12	*16*
Mozambique	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	3	17	0	0	42	26	15	15	0	0	40	42
Namibia	..	..	..	..	..	..	..	..	..	..	..	..
Nepal	6	12	0	0	37	37	33	28	8	4	16	18
Netherlands	30	26	36	40	21	24	0	0	3	4	11	6
New Zealand	67	62	0	0	18	26	3	2	1	2	10	8
Nicaragua	8	*11*	9	*13*	37	*42*	25	*21*	8	*6*	10	*6*
Niger	24	..	4	..	18	..	36	..	3	..	15	..
Nigeria	..	..	..	..	..	..	..	..	..	..	..	..
Norway	27	19	22	21	39	36	1	1	1	1	9	22
Oman	26	21	0	0	0	1	1	3	0	2	71	72
Pakistan	14	21	0	0	34	27	34	24	0	7	18	21
Panama	21	18	21	14	17	*17*	10	*10*	4	3	27	39
Papua New Guinea	60	*50*	0	*0*	12	*10*	16	*24*	1	*2*	10	*14*
Paraguay	15	..	13	..	18	..	25	..	19	..	9	..
Peru	26	21	0	8	37	46	27	9	10	6	8	13
Philippines	21	33	0	0	42	27	24	26	2	4	11	9
Poland	..	26	..	28	..	30	..	7	..	1	..	8
Portugal	19	26	26	25	33	37	5	0	9	3	7	9
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	0	27	13	27	0	23	0	6	9	4	78	12
Russian Federation	..	*14*	..	*29*	..	*34*	..	*9*	..	*2*	..	*6*

4.15 Central government revenues

	Taxes on income, profit, and capital gains		Social security taxes		Taxes on goods and services		Taxes on international trade		Other taxes		Nontax revenue	
	% of total current revenue		% of total current revenue		% of total current revenue		% of total current revenue		% of total current revenue		% of total current revenue	
	1980	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**	**1980**	**1996**
Rwanda	18	..	4	..	19	..	42	..	2	..	14	..
Saudi Arabia	..	..	..	..	..	..	..	..	..	..	..	..
Senegal	18	..	4	..	26	..	34	..	4	..	6	..
Sierra Leone	22	16	0	0	16	30	50	50	2	0	10	5
Singapore	31	18	0	0	15	13	7	1	13	11	30	33
Slovak Republic	..	..	..	..	..	..	..	..	..	..	..	..
Slovenia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	56	53	1	2	24	34	3	2	3	3	13	7
Spain	23	*31*	48	*39*	13	*24*	4	*0*	4	*0*	8	*7*
Sri Lanka	16	14	0	0	27	54	50	17	2	4	5	11
Sudan	14	..	0	..	26	..	42	..	1	..	16	..
Sweden	18	11	33	37	29	31	1	0	4	8	14	12
Switzerland	14	14	48	51	19	24	9	1	2	2	7	7
Syrian Arab Republic	10	23	0	0	5	29	14	12	10	7	61	29
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	33	..	0	..	42	..	18	..	2	..	8	..
Thailand	18	32	0	1	46	41	26	15	2	2	8	9
Togo	34	..	6	..	15	..	32	..	1	..	14	..
Trinidad and Tobago	71	*49*	1	2	4	*25*	7	*6*	1	*1*	16	*14*
Tunisia	15	16	9	17	24	21	25	26	4	5	22	16
Turkey	48	32	0	0	19	46	6	2	5	2	20	17
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	11	..	0	..	41	..	44	..	0	..	3	..
Ukraine	..	..	..	..	..	..	..	..	..	..	..	..
United Arab Emirates	0	*0*	0	*2*	0	*23*	0	0	0	*0*	100	*74*
United Kingdom	38	*36*	16	*17*	28	*33*	0	*0*	6	*7*	13	*8*
United States	57	54	28	33	4	3	1	1	1	1	8	7
Uruguay	11	13	23	31	43	33	14	3	8	11	6	7
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	67	38	5	2	4	28	7	7	2	0	15	29
Vietnam	..	..	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	16	..	0	..	6	..	12	..	2	..	62
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	38	36	0	0	43	44	8	12	3	0	7	8
Zimbabwe	46	..	0	..	28	..	4	..	1	..	20	..
World	21 m	*19* m	4 m	*7* m	24 m	*32* m	15 m	*8* m	3 m	*3* m	11 m	*12* m
Low income	19	..	0	..	26	..	34	..	2	..	12	..
Middle income	19	17	4	6	20	33	15	7	4	2	13	13
Lower middle income	18	16	4	7	21	*34*	21	*10*	5	3	11	12
Upper middle income	34	19	5	6	19	33	7	7	3	2	16	15
Low & middle income	19	..	1	..	24	..	24	..	3	..	13	..
East Asia & Pacific	29	32	0	1	29	27	20	12	1	2	10	13
Europe & Central Asia	..	..	..	..	..	..	..	..	..	..	..	..
Latin America & Carib.	19	*16*	11	*11*	24	*33*	19	*9*	6	*4*	10	*14*
Middle East & N. Africa	15	16	5	0	7	8	17	14	7	4	34	25
South Asia	14	17	0	0	34	32	33	25	2	4	16	20
Sub-Saharan Africa	22	..	1	..	25	..	35	..	3	..	10	..
High income	29	26	19	25	24	26	2	0	3	3	10	8
Europe EMU	26	26	35	38	25	25	1	0	3	3	8	6

Note: Components may not sum to 100 percent as a result of adjustments to tax revenue.
a. Data prior to 1992 include Eritrea. b. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Central government revenues 4.15

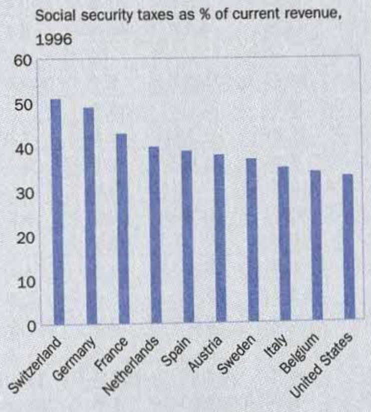
About the data

The International Monetary Fund (IMF) classifies government transactions as receipts or payments and according to whether they are repayable or nonrepayable. If nonrepayable, they are classified as capital (meant to be used in production for more than a year) or current, and as requited (involving payment in return for a benefit or service) or unrequited. Revenues include all nonrepayable receipts (other than grants), the most important of which are taxes. Grants are unrequited, nonrepayable, noncompulsory receipts from other governments or international organizations. Transactions are generally recorded on a cash rather than an accrual basis. Measuring the accumulation of arrears on revenues or payments on an accrual basis would typically result in a higher deficit. Transactions within a level of government are not included, but transactions between levels are included. In some instances the government budget may include transfers used to finance the deficits of autonomous, extrabudgetary agencies.

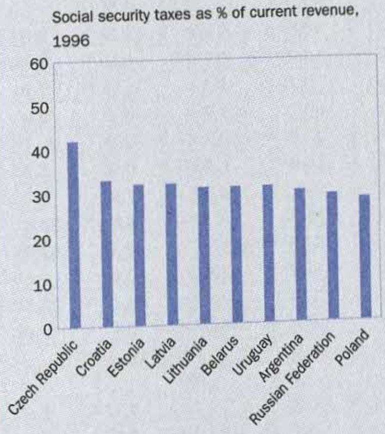
The IMF's *Manual on Government Finance Statistics* (1986) describes taxes as compulsory, unrequited payments made to governments by individuals, businesses, or institutions. Taxes traditionally have been classified as either direct (those levied directly on the income or profits of individuals and corporations) or indirect (sales and excise taxes and duties levied on goods and services). This distinction may be a useful simplification, but it has no particular analytical significance. For further discussion of taxes and tax policies see *About the data* for table 5.5. For further discussion of government revenues and expenditures see *About the data* for tables 4.13 and 4.14.

Figure 4.15

Social security taxes account for a large share of current revenue in high-income countries . . .



. . . and a large share in many middle-income countries

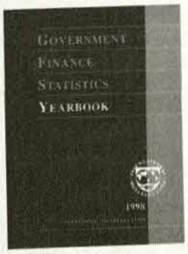


Source: International Monetary Fund, Government Finance Statistics data files.

Definitions

- **Taxes on income, profit, and capital gains** are levied on the actual or presumptive net income of individuals, on the profits of enterprises, and on capital gains, whether realized on land, securities, or other assets. Intragovernmental payments are eliminated in consolidation. • **Social security taxes** include employer and employee social security contributions and those of self-employed and unemployed people. • **Taxes on goods and services** include general sales and turnover or value added taxes, selective excises on goods, selective taxes on services, taxes on the use of goods or property, and profits of fiscal monopolies. • **Taxes on international trade** include import duties, export duties, profits of export or import monopolies, exchange profits, and exchange taxes. • **Other taxes** include employer payroll or labor taxes, taxes on property, and taxes not allocable to other categories. They may include negative values that are adjustments (for example, for taxes collected on behalf of state and local governments and not allocable to individual tax categories). • **Nontax revenue** includes requited, nonrepayable receipts for public purposes, such as fines, administrative fees, or entrepreneurial income from government ownership of property, and voluntary, unrequited, nonrepayable receipts other than from government sources. Proceeds of grants and borrowing, funds arising from the repayment of previous lending by governments, incurrence of liabilities, and proceeds from the sale of capital assets are not included.

Data sources



Data on central government revenues are from the IMF's *Government Finance Statistics Yearbook, 1998* and IMF data files. Each country's accounts are reported using the system of common definitions and classifications found in the IMF's *Manual on Government Finance Statistics* (1986). The IMF receives additional information from the Organisation for Economic Co-operation and Development on the tax revenues of some of its members. See the IMF sources for complete and authoritative explanations of concepts, definitions, and data sources.

4.16 Monetary indicators and prices

	Money and quasi money		Claims on private sector		Claims on governments and other public entities		GDP implicit deflator		Consumer price index		Food price index	
	annual % growth of M2		annual growth as % of M2		annual growth as % of M2		average annual % growth		average annual % growth		average annual % growth	
	1990	**1997**	**1990**	**1997**	**1990**	**1997**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**
Albania	..	28.9	..	1.4	..	31.9	–0.4	58.1	..	..	..	44.9
Algeria	11.4	18.6	12.2	–3.2	3.2	–45.9	8.1	23.8	9.1	24.8	6.8	26.0
Angola	..	..	..	..	..	..	*5.9*	1,091.4	..	..	..	*1,216.9*
Argentina	1,113.3	25.5	1,444.7	14.6	1,573.2	5.7	389.8	12.2	390.6	15.9	206.9	15.2
Armenia	..	29.6	..	20.7	..	–11.5	..	482.8	..	..	..	..
Australia	12.8	7.3	15.3	11.8	–2.2	–4.8	7.3	1.7	7.9	2.3	7.4	2.4
Austria	9.7	2.1	12.1	9.9	1.6	–1.4	3.3	2.6	3.2	2.8	2.6	1.9
Azerbaijan	..	41.4	..	14.8	..	2.5	..	447.8	..	..	*1.5*	455.5
Bangladesh	10.4	9.8	9.2	10.7	–0.2	2.1	9.5	3.6	10.5	3.8	10.4	4.3
Belarus	..	111.4	..	65.9	..	55.5	..	561.4	..	..	*2.4*	611.7
Belgium	4.1	7.1	3.5	5.2	5.6	–4.2	4.4	2.6	4.2	2.2	4.0	0.8
Benin	28.6	4.7	–1.3	–11.0	12.4	0.6	1.3	10.6	..	..	..	..
Bolivia	52.8	16.5	40.8	21.4	18.0	2.3	327.9	10.4	322.5	10.5	322.0	11.2
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	–14.0	28.6	12.6	4.7	–52.4	–255.3	13.1	10.2	10.0	11.9	10.7	12.6
Brazil	1,289.2	18.4	1,566.4	9.5	3,093.6	3.6	284.0	475.7	285.6	456.6	238.2	*646.5*
Bulgaria	*53.8*	362.1	*1.9*	122.9	*84.5*	123.0	1.8	109.5	..	..	..	*147.9*
Burkina Faso	–0.5	17.6	3.6	24.6	–1.5	8.9	3.3	6.9	*1.0*	6.8	*–0.5*	*5.4*
Burundi	10.4	9.4	16.3	4.4	–5.3	18.8	4.4	10.7	7.1	15.1	6.1	*6.7*
Cambodia	..	16.6	..	22.2	..	–8.0	..	37.8	..	..	..	..
Cameroon	–1.7	18.6	0.9	–6.5	–3.0	13.3	5.6	6.4	8.7	8.6	..	..
Canada	7.8	8.6	9.2	14.9	0.7	–0.8	4.5	1.4	5.3	1.8	4.6	1.4
Central African Republic	–3.7	–7.7	–1.6	0.7	2.3	–1.9	7.9	5.9	3.2	7.3	*2.0*	7.8
Chad	–2.4	–4.1	–1.3	–0.7	–17.3	–0.3	2.9	7.3	*0.6*	9.1	..	..
Chile	23.5	16.3	21.4	23.5	16.4	–2.8	20.7	10.2	20.6	11.4	20.8	11.3
China	28.9	20.7	26.5	16.9	1.5	0.3	5.9	11.2	..	12.6	..	..
Hong Kong, China	*8.5*	60.9	*7.9*	18.5	*–1.0*	–1.9	7.7	6.7	..	..	6.8	6.8
Colombia	32.7	41.9	8.7	38.2	*–5.1*	14.8	24.8	22.4	22.7	23.1	24.5	20.5
Congo, Dem. Rep.	195.4	*357.6*	18.0	*59.6*	429.7	*–0.9*	62.9	2,012.8	57.1	2,089.0	..	..
Congo, Rep.	18.5	9.5	5.1	4.6	–12.6	10.6	0.5	8.9	6.1	*14.8*	4.1	*10.2*
Costa Rica	27.5	16.4	7.3	12.6	8.2	13.3	23.6	18.0	23.0	17.4	23.0	14.9
Côte d'Ivoire	–2.6	8.2	–3.9	8.4	–3.0	0.4	2.8	9.3	5.4	9.1	..	..
Croatia	..	37.7	..	39.0	..	–18.5	..	*218.1*	*304.1*	171.7	*246.3*	168.8
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	1.7	..	20.3	..	–7.7	*1.5*	17.1	..	..	..	*18.6*
Denmark	6.5	6.8	3.0	3.9	–3.1	–0.9	5.6	1.9	5.5	2.0	4.8	1.8
Dominican Republic	39.1	24.3	20.8	20.6	0.8	1.9	21.6	11.5	22.4	10.3	13.1	*11.6*
Ecuador	101.6	32.8	46.7	39.6	–22.4	3.8	36.4	33.3	35.8	34.7	*43.0*	*34.6*
Egypt, Arab Rep.	28.7	10.8	6.3	12.0	25.3	3.4	13.7	10.5	17.4	11.4	19.0	9.0
El Salvador	32.4	18.8	8.8	22.4	9.6	–1.7	16.3	9.8	19.6	11.6	21.4	14.1
Eritrea	..	..	..	..	..	..	..	*12.7*	..	..	..	..
Estonia	*71.1*	37.8	*27.6*	50.6	*–11.3*	–9.7	2.3	92.2	..	..	..	90.1
Ethiopia[a]	18.5	14.6	–1.0	8.5	21.7	–0.4	*3.6*	8.9	4.0	6.9	3.7	*12.4*
Finland	5.0	2.5	17.1	–3.6	–0.1	–0.2	6.8	1.8	6.2	1.7	5.8	–1.1
France	3.3	7.3	15.7	2.4	0.3	2.5	6.0	1.8	5.8	2.0	5.7	1.1
Gabon	3.3	11.3	0.7	18.5	–20.6	–3.6	1.8	8.5	5.1	5.7	*2.8*	*5.1*
Gambia, The	8.4	23.0	7.8	8.6	–35.4	2.6	17.9	4.7	20.0	5.1	20.4	5.0
Georgia	..	..	..	..	..	..	1.9	1,033.2	..	..	..	..
Germany[b]	18.6	2.2	26.5	9.8	2.0	2.6	..	*2.5*	2.2	3.0	..	2.0
Ghana	13.3	45.5	4.9	26.4	–0.8	61.5	42.1	29.2	39.1	31.2	33.1	*27.5*
Greece	14.3	10.9	4.6	8.9	16.3	–0.9	18.0	*12.2*	18.7	11.7	18.0	11.2
Guatemala	25.8	–4.2	15.0	4.9	0.5	–12.0	14.6	12.2	14.0	12.1	14.6	12.5
Guinea	–17.4	18.2	13.1	–0.3	7.3	–9.0	..	6.2	..	..	..	*9.1*
Guinea-Bissau	65.3	*48.4*	57.4	*8.8*	109.9	*11.9*	57.4	45.3	..	44.6	..	..
Haiti	2.5	18.4	–0.6	18.2	0.4	0.2	7.5	25.3	5.2	26.2	4.1	*19.2*
Honduras	21.4	50.5	13.0	38.2	–10.5	–9.7	5.7	20.4	6.3	20.2	5.1	22.5

Monetary indicators and prices 4.16

	Money and quasi money		Claims on private sector		Claims on governments and other public entities		GDP implicit deflator		Consumer price index		Food price index	
	annual % growth of M2		annual growth as % of M2		annual growth as % of M2		average annual % growth		average annual % growth		average annual % growth	
	1990	**1997**	**1990**	**1997**	**1990**	**1997**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**
Hungary	29.2	*18.4*	22.8	*5.5*	2.3	*–7.2*	8.9	22.8	9.6	23.6	9.5	23.6
India	15.1	17.7	5.9	6.0	10.5	5.8	8.0	8.8	8.6	9.6	8.4	10.2
Indonesia	44.6	25.2	66.9	31.2	–6.7	–9.0	8.5	8.6	8.3	8.6	8.6	9.6
Iran, Islamic Rep.	18.0	23.7	14.7	12.1	5.8	2.5	14.4	*32.5*	18.2	28.9	16.3	*32.6*
Iraq	..	..	..	..	..	..	10.3	..	..	..	..	..
Ireland	8.9	*13.6*	0.6	*9.8*	1.9	–2.6	6.6	1.8	6.8	2.2	10.5	2.0
Israel	19.4	15.0	18.5	13.7	4.9	–6.1	101.1	11.4	101.7	11.7	102.4	9.5
Italy	10.2	–5.8	11.3	3.8	2.6	–1.7	10.0	4.6	9.1	4.5	8.2	4.0
Jamaica	21.5	13.3	12.5	5.7	–16.0	17.6	18.6	32.8	15.1	32.7	16.2	32.9
Japan	8.2	3.1	9.7	0.5	1.5	1.1	1.7	0.5	1.7	1.0	1.6	0.8
Jordan	8.3	7.6	4.7	3.6	1.0	–2.1	4.3	3.3	5.7	4.1	4.7	4.4
Kazakhstan	..	8.2	..	–2.1	..	–0.2	..	440.4	..	..	..	*777.8*
Kenya	20.1	16.8	8.0	15.2	21.5	5.1	9.1	16.0	11.1	21.0	..	21.8
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	17.2	14.1	36.1	30.8	–1.5	2.5	6.1	5.3	4.9	5.6	5.0	5.7
Kuwait	*0.7*	3.9	*3.3*	15.7	*–3.1*	–1.7	*–2.8*	..	2.9	2.2	*1.1*	..
Kyrgyz Republic	..	..	..	..	..	..	..	199.1	..	..	..	*171.8*
Lao PDR	7.8	65.8	3.6	53.0	7.0	33.8	..	12.2	..	..	..	..
Latvia	..	37.8	..	21.7	..	–3.3	0.0	87.7	..	..	..	45.9
Lebanon	55.1	19.6	27.6	10.4	18.5	13.6	..	27.7	..	..	..	..
Lesotho	8.4	9.4	6.8	4.8	–17.4	–44.7	13.8	8.0	13.6	*12.1*	13.2	13.0
Libya	20.3	20.7	0.9	7.0	8.5	–21.7	*0.2*	..	..	..	..	..
Lithuania	..	34.1	..	5.4	..	11.3	..	140.3	..	..	..	*114.1*
Macedonia, FYR	..	..	..	..	..	..	..	*60.5*	..	..	*242.1*	146.3
Madagascar	4.5	20.8	23.8	7.4	–14.8	–6.1	17.1	23.6	16.6	23.0	15.7	23.2
Malawi	11.1	2.1	15.8	3.6	–12.8	–7.4	14.6	33.8	16.9	*34.2*	16.3	*39.7*
Malaysia	10.6	17.5	20.8	25.3	–1.2	2.0	1.7	4.5	2.6	4.0	*1.3*	4.7
Mali	–4.9	9.0	0.1	8.3	–13.4	4.6	3.6	10.0	..	..	..	..
Mauritania	11.5	8.0	20.2	11.8	1.5	–44.5	8.4	6.0	*7.1*	6.6	..	..
Mauritius	21.2	16.4	10.8	15.3	0.8	6.6	9.5	6.4	6.9	7.1	*7.4*	*7.5*
Mexico	81.9	34.6	48.5	–0.3	13.6	–7.3	72.1	19.3	73.8	19.5	73.1	19.1
Moldova	*358.0*	34.5	*53.3*	1.2	*469.1*	33.8	..	222.5	..	..	..	*230.3*
Mongolia	*31.6*	42.2	*40.2*	–14.3	*38.5*	–5.7	*–1.6*	89.3	..	..	..	..
Morocco	21.5	8.1	*12.4*	3.7	–4.9	2.9	7.1	3.8	7.0	5.0	6.7	7.2
Mozambique	37.2	23.7	22.0	25.6	–5.1	–15.5	38.3	45.9	..	44.6	..	..
Myanmar	37.7	25.0	12.8	7.0	23.4	15.1	12.2	24.2	11.5	25.3	11.9	26.8
Namibia	*30.3*	6.7	*15.4*	14.8	–4.2	–15.5	13.9	9.4	12.6	10.7	*14.9*	*11.1*
Nepal	18.5	15.8	5.7	10.0	7.3	1.5	11.1	9.7	10.2	9.6	*10.0*	*10.5*
Netherlands	6.9	6.8	6.7	15.8	–0.1	2.6	1.6	2.0	2.0	2.5	1.2	1.5
New Zealand	74.0	4.7	76.6	11.9	0.1	1.5	10.8	1.7	10.9	2.0	9.9	0.9
Nicaragua	7,677.8	54.4	4,932.9	28.7	12,679.2	41.1	422.6	*67.7*	535.7	*62.9*	..	..
Niger	–4.1	–21.3	–5.1	–6.2	1.4	22.8	1.9	7.2	0.7	7.3	..	..
Nigeria	32.7	16.9	7.8	14.4	27.1	–18.3	16.7	42.6	21.5	44.9	21.6	*41.5*
Norway	5.6	1.4	5.0	19.3	–0.6	–14.6	5.6	1.9	7.4	2.1	7.8	1.2
Oman	10.0	24.5	9.6	37.1	–10.9	–8.0	–3.6	*–2.9*	..	..	..	*0.2*
Pakistan	11.6	19.9	5.9	7.6	7.7	3.3	6.7	11.3	6.3	11.1	*6.6*	11.9
Panama	36.6	15.0	0.8	16.9	–25.7	–6.5	1.9	*2.8*	1.4	1.1	1.9	1.3
Papua New Guinea	4.3	7.7	1.3	12.0	7.2	6.9	5.3	6.7	5.6	7.6	4.6	*6.8*
Paraguay	52.5	9.2	33.1	9.7	–9.5	8.0	24.4	16.1	21.9	15.6	24.9	*14.4*
Peru	6,384.9	30.8	2,123.7	27.2	2,129.5	9.9	231.3	40.1	246.1	44.3	..	41.0
Philippines	22.5	26.1	15.7	25.9	3.4	9.9	14.9	8.6	14.4	8.9	14.1	8.1
Poland	160.1	29.2	20.8	16.7	75.6	8.5	53.8	29.5	50.9	34.0	52.4	29.8
Portugal	9.2	6.8	6.5	16.1	2.1	–5.5	18.0	6.3	17.1	5.7	16.9	4.3
Puerto Rico	..	..	..	..	..	..	3.5	..	..	..	2.8	7.6
Romania	26.4	105.0	..	..	265.2	21.2	2.5	124.0	..	..	*1.8*	127.5
Russian Federation	..	29.5	..	19.0	..	17.5	..	298.8	..	..	..	*390.9*

4.16 Monetary indicators and prices

	Money and quasi money		**Claims on private sector**		**Claims on governments and other public entities**		**GDP implicit deflator**		**Consumer price index**		**Food price index**	
	annual % growth of M2		annual growth as % of M2		annual growth as % of M2		average annual % growth		average annual % growth		average annual % growth	
	1990	**1997**	**1990**	**1997**	**1990**	**1997**	**1980–90**	**1990–97**	**1980–90**	**1990–97**	**1980–90**	**1990–97**
Rwanda	5.6	29.1	–10.0	23.8	26.8	14.6	4.0	19.3	3.9	*22.6*	..	..
Saudi Arabia	4.6	5.2	–4.5	3.9	4.2	1.6	–4.9	1.8	–0.8	1.7	–0.4	1.6
Senegal	–4.8	3.5	–8.4	3.0	–5.3	–1.6	6.5	6.5	6.2	7.2	5.3	*8.3*
Sierra Leone	74.0	47.1	4.9	6.2	228.7	50.4	64.0	34.5	72.4	33.7	..	..
Singapore	20.0	10.3	13.7	14.4	–4.9	0.7	2.2	2.9	1.6	2.3	0.9	2.1
Slovak Republic	..	8.7	..	25.5	..	–20.1	*1.8*	12.6	..	..	1.6	15.9
Slovenia	*123.0*	23.3	*96.1*	9.4	*–10.4*	2.5	..	*32.3*	..	..	*252.3*	41.7
South Africa	11.4	17.8	13.7	17.5	1.8	2.9	14.9	10.1	14.8	10.0	15.1	12.1
Spain	13.6	1.5	8.4	13.0	7.0	–1.7	9.3	4.6	9.0	4.6	9.3	3.5
Sri Lanka	21.1	13.8	16.2	8.3	6.8	–1.5	11.0	9.8	10.9	10.8	10.9	11.2
Sudan	48.8	37.7	12.6	6.5	29.4	9.3	41.6	81.6	37.6	100.4	..	..
Sweden	..	..	..	..	..	..	7.4	2.6	7.0	2.9	8.2	–0.7
Switzerland	0.8	6.6	11.7	3.5	1.0	0.0	3.4	1.9	2.9	2.3	3.1	0.5
Syrian Arab Republic	26.1	–48.3	3.4	2.0	11.4	*–6.4*	15.3	8.9	23.2	10.3	24.5	8.5
Tajikistan	..	..	..	..	..	..	..	*394.3*	..	..	..	..
Tanzania	41.9	12.9	22.6	6.1	80.6	–7.0	..	25.2	31.0	25.7	30.2	25.3
Thailand	26.7	16.5	30.0	24.9	–4.0	2.1	3.9	4.8	3.5	4.9	2.7	6.3
Togo	9.5	5.1	1.8	7.5	6.9	–0.6	4.8	8.9	2.5	10.9	..	..
Trinidad and Tobago	6.2	11.3	2.7	13.2	–1.9	9.6	2.4	7.2	10.7	6.5	14.6	*14.0*
Tunisia	7.6	16.5	5.9	13.1	1.8	3.4	7.4	5.0	*7.4*	5.1	8.3	5.0
Turkey	53.2	97.5	42.9	74.1	10.0	9.1	45.2	79.3	44.9	81.4	..	82.8
Turkmenistan	..	*449.1*	..	*666.5*	..	*–520.5*	..	*1,074.2*	..	..	..	..
Uganda	60.2	20.8	..	1.4	..	19.4	*113.8*	17.5	102.5	14.9	..	*13.4*
Ukraine	..	33.9	..	12.4	..	29.4	..	591.0	..	..	..	..
United Arab Emirates	–8.2	9.0	1.3	12.7	–4.8	1.2	*0.4*	..	..	..	..	..
United Kingdom	..	..	..	..	..	..	5.7	3.2	5.8	3.0	4.6	2.4
United States	4.9	6.6	1.1	9.3	0.6	2.1	4.2	2.1	4.2	2.9	3.8	4.0
Uruguay	118.5	28.4	56.2	23.4	25.8	–0.5	61.3	45.4	61.1	48.3	62.0	43.9
Uzbekistan	..	..	..	..	..	..	..	442.5	..	..	..	..
Venezuela	71.2	58.5	17.0	49.9	42.7	–14.2	19.3	50.0	20.9	53.5	29.7	50.1
Vietnam	..	24.3	..	12.8	..	7.3	*210.8*	19.7	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	*11.3*	11.2	*1.4*	4.5	*10.2*	–2.9	..	26.7	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	52.3	23.8	21.2	5.0	175.3	–5.0	42.2	72.4	*72.5*	80.8	42.8	*98.4*
Zimbabwe	15.1	41.2	13.5	41.0	5.0	54.8	11.6	22.4	13.8	25.6	14.6	31.4

a. Data prior to 1992 include Eritrea. b. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Monetary indicators and prices 4.16

About the data

Money and the financial accounts that record the supply of money lie at the heart of a country's financial system. There are several commonly used definitions of the money supply. The narrowest, M1, encompasses currency held by the public and demand deposits with banks. M2 includes M1 plus time and savings deposits with banks that require a notice for withdrawal. M3 includes M2 as well as various money market instruments, such as certificates of deposit issued by banks, bank deposits denominated in foreign currency, and deposits with financial institutions other than banks. However defined, money is a liability of the banking system, distinguished from other bank liabilities by the special role it plays as a medium of exchange, a unit of account, and a store of value.

The banking system's assets include its net foreign assets and net domestic credit. Net domestic credit includes credit to the private sector and general government, and credit extended to the nonfinancial public sector in the form of investments in short- and long-term government securities and loans to state enterprises; liabilities to the public and private sector in the form of deposits with the banking system are netted out. It also includes credit to banking and nonbank financial institutions.

Domestic credit is the main vehicle through which changes in the money supply are regulated, with central bank lending to the government often playing the most important role. The central bank can regulate lending to the private sector in several ways—for example, by adjusting the cost of the refinancing facilities it provides to banks, by changing market interest rates through open market operations, or by controlling the availability of credit through changes in the reserve requirements imposed on banks and ceilings on the credit provided by banks to the private sector.

Monetary accounts are derived from the balance sheets of financial institutions—the central bank, commercial banks, and nonbank financial intermediaries. Although these balance sheets are usually reliable, they are subject to errors of classification and valuation and differences in accounting practices. For example, whether interest income is recorded on an accrual or a cash basis can make a substantial difference, as can the treatment of nonperforming assets. Valuation errors typically arise with respect to foreign exchange transactions, particularly in countries with flexible exchange rates or in those that have undergone a currency devaluation during the reporting period. The valuation of financial derivatives can also be difficult.

The quality of commercial bank reporting also may be adversely affected by delays in reports from bank branches, especially in countries where branch accounts are not computerized. Thus the data in the balance sheets of commercial banks may be based on preliminary estimates subject to constant revision. This problem is likely to be even more serious for nonbank financial intermediaries.

Controlling inflation is one of the primary goals of monetary policy. Inflation is measured by the rate of change in a price index. Which index is used depends on which set of prices in the economy is being examined. The GDP deflator, the most general measure of the overall price level, takes into account changes in government costs, inventory appreciation, and investment expenditures. The GDP deflator reflects changes in prices for all the final demand categories, such as government consumption, capital formation, and international trade, as well as the main component, private final consumption. It is usually derived implicitly as the ratio of current to constant price GDP. It may also be calculated explicitly as a Laspeyres price index in which the weights are base period quantities of output.

Consumer price indexes are constructed explicitly, based on surveys of the cost of a defined basket of consumer goods and services. Indexes of consumer prices should be interpreted with caution. The definition of a household and the geographic (urban or rural) and income group coverage of consumer price surveys can vary widely across countries. In addition, the basket of goods chosen varies by country. And the weights are derived from household expenditure surveys, which for budgetary reasons tend to be conducted infrequently in developing countries, leading to poor comparability over time. Although a useful indicator for measuring consumer price inflation within a country, the consumer price index is of less value in making comparisons across countries. Consumer price indexes should be distinguished from retail price indexes, which are used in a few countries. Retail price indexes are based on prices at retail outlets weighted by sales turnover, so the weights may differ by country and over time. Like consumer price indexes, the food price index too should be interpreted with caution.

Definitions

- **Money and quasi money** comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This definition of the money supply is frequently called M2; it corresponds to lines 34 and 35 in the International Monetary Fund's (IMF) *International Financial Statistics* (IFS). The change in money supply is measured as the difference in end-of-year totals relative to the level of M2 in the preceding year. • **Claims on private sector** (IFS line 32d) include gross credit from the financial system to individuals, enterprises, nonfinancial public entities not included under net domestic credit, and financial institutions not included elsewhere. • **Claims on governments and other public entities** (IFS line 32an + 32b + 32bx + 32c) usually comprise direct credit for specific purposes such as financing of the government budget deficit, loans to state enterprises, advances against future credit authorizations, and purchases of treasury bills and bonds. Public sector deposits with the banking system also include sinking funds for the service of debt and temporary deposits of government revenues. • **GDP implicit deflator** measures the average annual rate of price change in the economy as a whole for the periods shown. The least-squares method is used to calculate the growth rate of the GDP deflator. • **Consumer price index** reflects changes in the cost to the average consumer of acquiring a fixed basket of goods and services. The Laspeyres formula is generally used. • **Food price index** is a subindex of the consumer price index.

Data sources

The IMF collects data on the financial systems of its member countries. The data in the table are published in the monthly *International Financial Statistics* and the annual *International Financial Statistics Yearbook*. The World Bank receives data from the IMF in electronic files that may contain more recent revisions than the published sources. GDP data are from the World Bank's national accounts files. Food price index data are from the United Nations' *Statistical Yearbook* and *Monthly Bulletin of Statistics*. The discussion of monetary indicators draws from an IMF publication by Marcello Caiola, *A Manual for Country Economists* (1995).

4.17 Balance of payments current account

	Goods and services				Net income		Net current transfers		Current account balance		Gross international reserves	
	Exports $ millions		Imports $ millions		$ millions		$ millions		$ millions		$ millions	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Albania	378	222	371	809	4	50	6	265	16	–272	..	309
Algeria	14,128	14,890	12,311	10,280	–1,869	–2,210	301	..	249	..	3,773	8,047
Angola	..	5,286	..	4,681	..	–1,395	..	*3,841*	..	*3,266*	..	..
Argentina	9,897	28,494	13,182	34,758	–1,512	–4,205	23	350	–4,774	–10,119	6,719	22,320
Armenia	..	330	..	952	..	102	..	217	..	–303	..	229
Australia	25,755	83,705	27,071	81,877	–2,695	–14,321	–425	–16	–4,436	–12,508	1,690	16,845
Austria	26,650	85,323	29,921	87,821	–528	–368	–66	–1,698	–3,865	–4,564	5,280	19,736
Azerbaijan	..	1,154	..	1,900	..	–84	..	*80*	..	*–666*	..	466
Bangladesh	885	5,096	2,545	7,677	14	–91	802	1,770	–844	–902	300	1,581
Belarus	..	8,306	..	9,103	..	–79	..	78	..	–798	..	394
Belgium[a]	70,498	185,404	74,259	174,267	61	6,315	–1,231	–3,803	–4,931	13,650	7,823	16,190
Benin	226	530	421	696	8	–30	151	..	–36	..	8	253
Bolivia	1,030	1,362	833	2,049	–263	–266	60	248	–6	–705	106	1,087
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	645	*2,381*	818	*1,770*	–33	*–91*	55	*89*	–151	*609*	344	5,740
Brazil	21,869	60,256	27,826	79,817	–7,018	–16,091	144	1,812	–12,831	–33,840	5,769	50,826
Bulgaria	9,302	6,251	7,994	5,685	–412	–359	58	237	954	444	..	2,249
Burkina Faso	210	332	577	723	–3	–5	322	..	–49	..	68	345
Burundi	..	96	..	139	..	–12	..	60	..	4	95	113
Cambodia	..	896	..	1,252	..	–43	..	188	..	–210	..	299
Cameroon	1,792	2,443	1,829	2,041	–628	–609	102	87	–564	–120	189	1
Canada	74,977	247,438	70,259	236,225	–10,764	–20,913	–42	439	–6,088	–9,261	3,093	17,823
Central African Republic	201	213	327	237	3	–16	81	..	–43	..	55	179
Chad	71	271	79	587	–4	–5	24	..	12	..	5	136
Chile	5,968	20,608	7,052	22,218	–1,000	–2,975	113	528	–1,971	–4,057	3,123	17,306
China†	*23,637*	207,251	*18,900*	166,754	*451*	–15,923	*486*	5,144	*5,674*	29,718	2,545	142,762
Hong Kong, China	25,585	228,877	27,017	231,485	..	..	..	..	–1,432	–2,608	..	92,804
Colombia	5,328	15,861	5,454	18,784	–245	–3,371	165	612	–206	–5,682	4,831	9,507
Congo, Dem. Rep.	2,371	1,445	2,353	1,385	–293	–752	..	..	..	..	204	*83*
Congo, Rep.	1,021	1,800	1,025	1,368	–162	–664	–1	–20	–167	–252	86	60
Costa Rica	1,195	4,478	1,661	4,667	–212	–202	15	136	–664	–254	146	1,262
Côte d'Ivoire	3,577	4,927	4,145	3,694	–553	–849	–706	–350	–1,826	35	20	618
Croatia	..	8,198	..	11,402	..	–83	..	852	..	–2,434	..	2,686
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	29,869	..	32,713	..	–791	..	365	..	–3,271	..	9,734
Denmark	*21,989*	63,680	*21,727*	57,971	*–1,977*	–3,635	*–161*	–1,190	*–1,875*	883	3,387	19,124
Dominican Republic	1,271	6,420	1,919	7,124	–277	–538	205	*1,080*	–720	*–110*	202	391
Ecuador	2,887	6,000	2,946	5,787	–613	–1,347	30	391	–642	–743	1,013	2,093
Egypt, Arab Rep.	6,246	16,171	9,157	18,296	–318	884	2,791	4,146	–438	2,905	1,046	18,665
El Salvador	1,214	2,706	1,170	3,885	–62	–87	52	1,363	34	96	78	1,308
Eritrea	..	201	..	583	..	–3	..	364	..	–21	..	..
Estonia	..	3,609	..	4,142	..	–146	..	117	..	–562	..	758
Ethiopia[b]	569	1,017	782	1,683	7	–43	80	259	–126	–450	80	501
Finland	16,802	48,228	17,307	37,976	–783	–2,906	–114	–852	–1,403	6,494	1,870	8,417
France	153,197	365,342	155,915	319,781	2,680	2,693	–4,170	–8,780	–4,208	39,474	27,340	30,927
Gabon	2,409	3,295	1,475	2,165	–426	–674	–124	*–198*	384	*100*	108	283
Gambia, The	66	229	179	282	–2	–8	28	37	–87	–24	6	96
Georgia	..	622	..	1,192	..	35	..	..	..	–339	..	..
Germany[c]	224,224	590,985	225,599	558,836	914	–2,436	–12,858	–32,487	–13,319	–2,774	48,592	77,587
Ghana	1,210	1,657	1,178	2,641	–83	–130	81	*482*	30	*–324*	180	*829*
Greece	8,122	14,863	11,145	25,601	–273	–1,632	1,087	7,510	–2,209	–4,860	1,346	12,595
Guatemala	1,731	3,187	1,960	4,193	–44	–224	110	607	–163	–624	445	1,111
Guinea	..	741	..	834	..	–114	..	116	..	–91	..	122
Guinea-Bissau	*17*	56	*75*	107	*–8*	–14	*–14*	46	*–80*	*–26*	..	*12*
Haiti	306	218	481	809	–14	–12	89	*463*	–101	*–138*	16	77
Honduras	942	2,191	1,128	2,511	–152	–212	22	260	–317	–272	150	580
† Data for Taiwan, China	21,495	139,396	22,361	132,739	48	2,391	–95	–1,327	–913	7,721	2,205	83,502

Balance of payments current account 4.17

	Goods and services				Net income		Net current transfers		Current account balance		Gross international reserves	
	Exports $ millions		Imports $ millions		$ millions		$ millions		$ millions		$ millions	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	*9,671*	24,514	*9,152*	25,067	*–1,113*	–1,426	*63*	973	*–531*	–1,007	..	8,476
India	11,265	44,102	17,378	59,236	356	–2,507	2,860	11,830	–2,897	–5,811	6,944	24,688
Indonesia	*23,797*	63,238	*21,540*	62,830	*–3,073*	–6,332	*250*	1,034	*–566*	–4,890	5,392	16,587
Iran, Islamic Rep.	13,069	18,978	16,111	17,446	606	–379	–2	*463*	–2,438	*5,232*	10,223	..
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	9,610	61,447	12,044	51,711	–902	–9,708	1,204	1,956	–2,132	1,984	2,860	6,526
Israel	8,668	30,320	11,511	38,810	–757	–2,791	2,729	6,266	–871	–5,014	3,351	20,332
Italy	97,298	310,550	110,26	261,885	1,278	–11,202	1,101	–4,040	–10,587	33,425	23,126	55,739
Jamaica	1,363	3,177	1,408	3,984	–212	–193	121	624	–136	–376	105	682
Japan	146,980	478,542	156,970	431,094	770	55,739	–1,530	–8,834	–10,750	94,354	24,636	219,648
Jordan	1,181	3,893	2,417	5,652	36	–282	1,481	1,834	281	–206	1,143	2,126
Kazakhstan	..	7,611	..	8,279	..	–315	..	75	..	–909	..	1,697
Kenya	2,007	2,994	2,846	3,771	–194	–232	157	632	–876	–377	492	580
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	19,815	164,920	25,152	171,300	–512	–2,455	536	667	–5,312	–8,167	2,925	20,368
Kuwait	21,857	16,044	9,823	12,998	4,847	6,277	–1,580	–1,507	15,302	7,816	3,929	3,452
Kyrgyz Republic	..	676	..	817	..	–65	..	68	..	–139	..	170
Lao PDR	..	417	..	715	..	–19	..	91	..	–225	..	143
Latvia	..	2,871	..	3,348	..	55	..	77	..	–345	..	704
Lebanon	..	1,557	..	8,053	..	380	..	2,635	..	–3,481	1,588	5,976
Lesotho	90	309	475	1,214	266	321	175	..	56	..	50	572
Libya	22,084	..	12,671	..	–65	..	–1,134	..	8,214	..	13,091	..
Lithuania	..	5,224	..	6,237	..	–198	..	230	..	–981	..	1,010
Macedonia, FYR	..	1,330	..	1,862	..	–34	..	290	..	–275	..	257
Madagascar	516	772	1,075	1,063	–44	–103	47	*210*	–556	*–153*	9	282
Malawi	313	615	487	1,153	–149	–88	63	..	–260	..	68	162
Malaysia	14,097	92,897	13,525	91,522	–836	–5,074	–2	–1,094	–266	–4,792	4,387	20,788
Mali	263	644	520	897	–17	–51	150	126	–124	–178	15	415
Mauritania	253	463	449	387	–27	–52	90	*76*	–133	*22*	140	201
Mauritius	574	2,543	690	2,766	–23	–18	22	126	–117	–115	91	703
Mexico	22,622	121,829	27;601	122,424	–6,277	–12,106	834	5,247	–10,422	–7,451	2,960	28,797
Moldova	..	1,023	..	1,430	..	34	..	77	..	–296	..	366
Mongolia	*475*	504	*1,272*	535	*–11*	–15	*0*	*77*	*–808*	*39*	..	176
Morocco	3,233	9,510	5,207	10,627	–562	–1,175	1,130	2,205	–1,407	–87	399	3,993
Mozambique	399	499	844	1,007	22	–107	56	*283*	–367	*–359*	..	517
Myanmar	539	1,439	806	2,415	–48	–64	7	430	–307	–610	261	250
Namibia	..	1,726	..	1,908	..	54	..	322	..	193	..	251
Nepal	224	1,295	365	1,855	13	5	36	95	–93	–460	183	626
Netherlands	90,380	213,503	91,622	191,173	1,535	4,817	–1,148	–5,905	–855	21,242	11,645	24,865
New Zealand	6,403	17,835	6,934	18,434	–538	–5,322	96	355	–973	–5,566	352	4,451
Nicaragua	495	863	907	1,609	–124	–222	124	367	–411	–601	65	378
Niger	617	301	956	442	–33	–25	97	*31*	–276	*–152*	126	53
Nigeria	27,071	15,994	20,013	14,213	–1,304	–3,145	–576	1,916	5,178	552	10,235	*4,075*
Norway	27,264	63,213	23,749	52,286	–1,922	–1,391	–515	–1,424	1,079	8,112	6,048	23,400
Oman	3,757	7,649	2,298	5,815	–257	–460	–260	–1,430	942	–57	581	1,549
Pakistan	2,958	9,956	5,709	14,677	–281	–2,167	2,163	3,213	–868	–3,675	496	1,195
Panama	3,422	8,276	3,394	8,581	–397	–201	40	162	–329	–343	117	1,148
Papua New Guinea	1,029	2,462	1,322	2,656	–179	–335	184	*72*	–289	*313*	423	363
Paraguay	701	4,343	1,314	4,960	–4	87	0	47	–618	–483	762	695
Peru	4,631	8,356	3,970	10,842	–909	–1,602	147	681	–101	–3,407	1,980	10,982
Philippines	7,235	40,365	9,166	50,477	–420	4,729	447	1,080	–1,904	–4,303	2,846	7,266
Poland	16,061	39,717	17,842	46,367	–2,357	–1,129	721	2,035	–3,417	–5,744	128	20,407
Portugal	6,674	32,339	10,136	40,684	–608	–245	3,006	6,713	–1,064	–1,877	795	15,660
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	12,087	9,853	13,730	12,448	–777	–322	0	579	–2,420	–2,338	323	3,803
Russian Federation	..	102,196	..	90,065	..	–9,200	..	–362	..	2,569	..	13,018

4.17 Balance of payments current account

	Goods and services				Net income		Net current transfers		Current account balance		Gross international reserves	
	Exports $ millions		Imports $ millions		$ millions		$ millions		$ millions		$ millions	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	165	152	319	488	2	–16	104	260	–48	–93	187	153
Saudi Arabia	106,765	64,168	55,793	51,632	526	3,156	–9,995	–15,439	41,503	254	23,437	7,353
Senegal	807	1,475	1,215	1,716	–98	–136	120	*382*	–386	*–58*	8	386
Sierra Leone	275	92	471	146	–22	–3	53	*26*	–165	*–127*	31	38
Singapore	24,285	156,252	25,312	144,168	–429	3,906	–106	–1,187	–1,563	14,803	6,567	71,289
Slovak Republic	..	10,959	..	12,367	..	–124	..	173	..	–1,359	..	3,230
Slovenia	..	10,449	..	10,631	..	131	..	88	..	37	..	3,315
South Africa	28,627	35,440	22,073	34,625	–3,285	–2,602	239	–143	3,508	–1,931	726	4,799
Spain	32,140	148,357	38,004	142,478	–1,362	–6,396	1,646	3,003	–5,580	2,486	11,863	68,398
Sri Lanka	1,293	5,514	2,197	6,569	–26	–165	274	832	–655	–388	246	2,024
Sudan	779	613	1,698	1,614	–143	–1,099	341	107	–721	–1,993	49	82
Sweden	38,151	100,989	39,878	84,779	–1,380	–6,174	–1,224	–2,736	–4,331	7,301	3,418	10,824
Switzerland	48,595	*121,737*	51,843	*109,063*	4,186	*11,597*	–1,140	*–3,801*	–201	*20,470*	15,656	39,028
Syrian Arab Republic	2,477	5,661	4,531	5,092	785	–504	1,520	499	251	564	337	..
Tajikistan	..	804	..	801	..	–67	..	*20*	..	*–84*	..	..
Tanzania	748	1,200	1,384	1,962	–14	–124	129	341	–521	–544	20	622
Thailand	7,939	72,415	9,996	72,437	–229	–3,480	210	479	–2,076	–3,024	1,560	26,179
Togo	550	632	691	724	–40	–23	86	..	–95	..	78	119
Trinidad and Tobago	3,139	2,698	2,434	2,857	–306	–339	–42	*–4*	357	*294*	2,781	706
Tunisia	3,262	8,081	3,766	8,644	–259	–863	410	785	–353	–640	590	1,978
Turkey	3,621	52,004	8,082	56,536	–1,118	–3,013	2,171	4,866	–3,408	–2,679	1,077	18,658
Turkmenistan	..	759	..	1,004	..	0	..	..	..	*43*	..	..
Uganda	329	825	441	1,651	–7	–17	–2	322	–121	–521	3	633
Ukraine	..	20,355	..	21,891	..	–644	..	845	..	–1,335	..	2,341
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	2,015	8,372
United Kingdom	146,072	366,505	134,200	371,843	–418	19,742	–4,592	–6,486	6,862	7,918	20,651	32,317
United States	271,800	937,434	290,730	1,043,477	29,580	–9,487	–8,500	–39,849	2,150	–155,375	15,596	58,907
Uruguay	1,526	4,256	2,144	4,450	–100	–208	9	81	–709	–321	384	1,556
Uzbekistan	..	3,980	..	4,417	..	–175	..	29	..	–583	..	..
Venezuela	19,968	25,120	15,130	18,282	329	–2,031	–439	–123	4,728	4,684	6,604	14,378
Vietnam	..	11,485	..	13,465	..	–602	..	713	*–775*	–1,870	..	1,986
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	2,522	..	3,005	..	–636	..	1,254	..	135	..	*1,017*
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	1,609	1,276	1,765	1,474	–205	–204	–155	..	–516	..	78	239
Zimbabwe	1,610	3,045	1,730	3,873	–61	–409	31	..	–149	..	214	160
World	2,293,875 t	6,869,405 t	2,325,531 t	6,760,876 t								
Low income	79,717	140,087	94,040	180,867								
Middle income	*556,445*	1,382,960	*537,010*	1,393,256								
Lower middle income	*206,993*	714,567	*218,759*	699,107								
Upper middle income	324,634	668,626	264,896	694,387								
Low & middle income	*626,401*	1,523,024	580,318	1,574,057								
East Asia & Pacific	*76,800*	496,821	*82,860*	469,845								
Europe & Central Asia	..	346,813	..	370,167								
Latin America & Carib.	114,161	335,490	129,051	375,905								
Middle East & N. Africa	181,639	175,078	132,682	161,072								
South Asia	17,314	66,540	28,820	90,646								
Sub-Saharan Africa	89,572	101,298	83,586	106,608								
High income	1,698,786	5,346,334	1,756,498	5,186,801								
Europe EMU	727,473	2,041,478	765,073	1,866,612								

a. Includes Luxembourg. b. Data prior to 1992 include Eritrea. c. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Balance of payments current account 4.17

About the data

The balance of payments records transactions between countries. Balance of payments accounts are divided into two groups: the current account refers to goods and services, income, and current transfers; the capital and financial account refers to capital transfers, the acquisition or disposal of nonproduced, nonfinancial assets, and financial assets and liabilities. This table presents data from the current account with the addition of gross international reserves from the capital and financial account.

The balance of payments is a double-entry accounting system that shows all flows of goods and services into and out of a country; all transfers that are the counterpart of real resources or financial claims provided to or by the rest of the world without a quid pro quo, such as donations and grants; and all changes in residents' claims on, and liabilities to, nonresidents that arise from economic transactions. All transactions are recorded twice—once as a credit and once as a debit. In principle the net balance should be zero, but in practice the accounts often do not balance. In these cases a balancing item, net errors and omissions, is included in the capital and financial account.

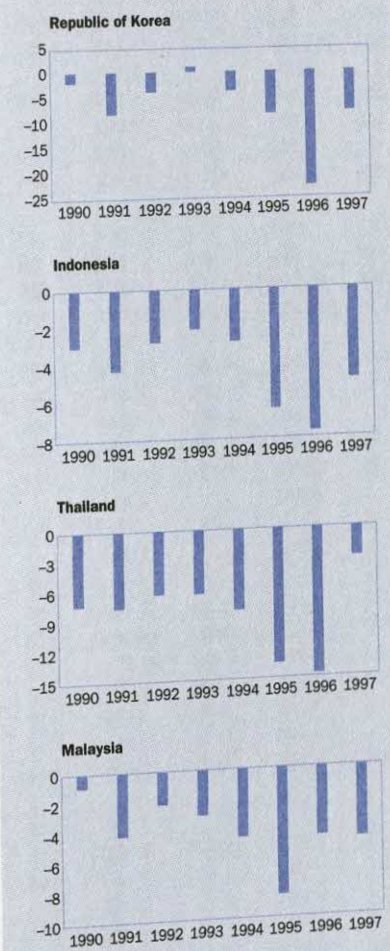
Discrepancies may arise in the balance of payments because there is no single source for balance of payments data and therefore no way to ensure that the data are fully consistent. Sources include customs data, monetary accounts of the banking system, external debt records, information provided by enterprises, surveys to estimate service transactions, and foreign exchange records. Differences in collection methods—such as in timing, definitions of residence and ownership, and the exchange rate used to value transactions—contribute to net errors and omissions. In addition, smuggling and other illegal or quasi-legal transactions may be unrecorded or misrecorded.

The concepts and definitions underlying the data here are based on the fifth edition of the International Monetary Fund's (IMF) *Balance of Payments Manual* (1993). The fifth edition redefined as capital transfers some transactions previously included in the current account, such as debt forgiveness, migrants' capital transfers, and foreign aid to acquire capital goods. Thus the current account balance now reflects more accurately net current transfer receipts in addition to transactions in goods, services (previously nonfactor services), and income (previously factor income). Many countries maintain their data collection systems according to the fourth edition. Where necessary, the IMF converts data reported in such systems to conform with the fifth edition (see *Primary data documentation*). Values are in U.S. dollars converted at market exchange rates.

Data in this table come from the IMF's Balance of Payments and International Financial Statistics databases, supplemented with estimates by World Bank staff for countries whose national accounts are recorded in fiscal years (see *Primary data documentation*) and countries for which the IMF does not collect balance of payments statistics. In addition, World Bank staff make estimates of missing data for the most recent year.

Figure 4.17

Current account deficits as a corollary to growth
$ billions



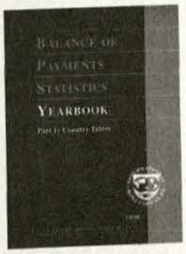
Source: IMF, Balance of Payments database.

Despite their reputation as formidable exporters, the East Asian tigers ran large current account deficits during their decade of growth.

Definitions

- **Exports and imports of goods and services** comprise all transactions between residents of a country and the rest of the world involving a change in ownership of general merchandise, goods sent for processing and repairs, nonmonetary gold, and services.
- **Net income** refers to employee compensation paid to nonresident workers and investment income (receipts and payments on direct investment, portfolio investment, and other investments, and receipts on reserve assets). Income derived from the use of intangible assets is recorded under business services. • **Net current transfers** are recorded in the balance of payments whenever an economy provides or receives goods, services, income, or financial items without a quid pro quo. All transfers not considered to be capital are current. • **Current account balance** is the sum of net exports of goods and services, income, and current transfers. • **Gross international reserves** comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (31 December) London prices ($589.50 an ounce in 1980 and $290.20 an ounce in 1997).

Data sources



More information about the design and compilation of the balance of payments can be found in the IMF's *Balance of Payments Manual,* fifth edition (1993), *Balance of Payments Textbook* (1996a), and *Balance of Payments Compilation Guide* (1995). The balance of payments data are published in the IMF's *Balance of Payments Statistics Yearbook* and *International Financial Statistics.* The World Bank exchanges data with the IMF through electronic files that in most cases are more timely and cover a longer period than the published sources. The International Financial Statistics and Balance of Payments databases are also available on CD-ROM.

4.18 External debt

	Total external debt		Long-term debt		Public and publicly guaranteed debt				Private nonguaranteed debt		Use of IMF credit	
					Total		IBRD loans and IDA credits					
	$ millions		$ millions		$ millions		$ millions		$ millions		$ millions	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Albania	..	706	..	603	..	603	..	148	..	0	..	55
Algeria	19,365	30,921	17,040	28,741	17,040	28,741	253	1,795	0	0	0	2,018
Angola	..	10,160	..	8,885	..	8,885	0	136	..	0	..	0
Argentina	27,157	123,221	16,774	99,365	10,181	73,955	404	5,494	6,593	25,411	0	5,868
Armenia	..	666	..	512	..	512	..	250	..	0	..	132
Australia	..	..	..	..	..	..	..	..	..	..	..	..
Austria	..	..	..	..	..	..	..	..	..	..	..	..
Azerbaijan	..	504	..	233	..	233	..	116	..	0	..	267
Bangladesh	4,230	15,125	3,594	14,578	3,594	14,578	981	5,739	0	0	424	372
Belarus	..	1,162	..	674	..	652	..	124	..	23	..	257
Belgium	..	..	..	..	..	..	..	..	..	..	..	..
Benin	424	1,624	334	1,393	334	1,393	52	510	0	0	16	95
Bolivia	2,702	5,247	2,273	4,570	2,181	4,144	239	967	92	426	126	248
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	147	562	143	522	143	522	66	58	0	0	0	0
Brazil	71,520	193,663	57,981	157,553	41,375	86,745	2,035	5,743	16,605	70,808	0	31
Bulgaria	..	9,858	..	8,144	..	7,721	..	501	..	424	..	942
Burkina Faso	330	1,297	281	1,139	281	1,139	77	636	0	0	15	92
Burundi	166	1,066	118	1,022	118	1,022	37	566	0	0	36	28
Cambodia	..	2,129	..	2,031	..	2,031	0	132	..	0	0	65
Cameroon	2,588	9,293	2,251	7,886	2,073	7,688	298	1,020	178	198	59	93
Canada	..	..	..	..	..	..	..	..	..	..	..	..
Central African Republic	195	885	147	804	147	804	29	403	0	0	24	19
Chad	284	1,026	259	939	259	939	36	457	0	0	14	61
Chile	12,081	31,440	9,399	21,519	4,705	4,364	184	989	4,693	17,155	123	0
China	4,504	146,697	4,504	115,233	4,504	112,821	0	16,069	0	2,412	0	0
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	6,940	31,777	4,604	26,018	4,088	15,273	1,012	1,732	515	10,746	0	0
Congo, Dem. Rep.	4,770	12,330	4,071	8,617	4,071	8,617	246	1,307	0	0	373	407
Congo, Rep.	1,526	5,071	1,257	4,284	1,257	4,284	61	238	0	0	22	34
Costa Rica	2,744	3,548	2,112	3,012	1,700	2,840	183	193	412	172	57	0
Côte d'Ivoire	7,462	15,609	6,339	12,498	4,327	10,427	314	2,144	2,012	2,071	65	450
Croatia	..	6,842	..	6,041	..	4,217	..	276	..	1,824	..	233
Cuba	..	..	..	..	..	..	..	..	0	..	0	..
Czech Republic	..	21,456	..	14,389	..	12,275	..	382	..	2,113	..	0
Denmark	..	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic	2,002	4,239	1,473	3,460	1,220	3,460	83	225	254	0	49	29
Ecuador	5,997	14,918	4,422	12,716	3,300	12,376	146	875	1,122	340	0	133
Egypt, Arab Rep.	19,131	29,849	14,693	26,858	14,428	26,804	728	2,075	265	54	411	0
El Salvador	911	3,282	659	2,471	499	2,427	114	294	161	45	32	0
Eritrea	..	76	..	76	..	76	..	29	..	0	..	0
Estonia	..	658	..	297	..	214	..	72	..	83	..	54
Ethiopia[a]	824	10,078	688	9,426	688	9,426	304	1,532	0	0	79	87
Finland	..	..	..	..	..	..	..	..	..	..	..	..
France	..	..	..	..	..	..	..	..	..	..	..	..
Gabon	1,514	4,284	1,272	3,671	1,272	3,671	19	77	0	0	15	131
Gambia, The	137	430	97	407	97	407	16	166	0	0	16	10
Georgia	..	1,446	..	1,168	..	1,168	..	212	..	0	..	255
Germany	..	..	..	..	..	..	..	..	..	..	..	..
Ghana	1,398	5,982	1,162	4,958	1,152	4,691	213	2,647	10	267	105	347
Greece	..	..	..	..	..	..	..	..	..	..	..	..
Guatemala	1,180	4,086	845	2,936	563	2,834	144	188	282	103	0	0
Guinea	1,134	3,520	1,019	3,008	1,019	3,008	87	922	0	0	35	99
Guinea-Bissau	140	921	133	838	133	838	5	221	0	0	1	12
Haiti	302	1,057	242	897	242	897	66	458	0	0	46	43
Honduras	1,472	4,698	1,168	4,170	976	3,910	216	772	191	259	33	46

External debt 4.18

	Total external debt		Long-term debt		Public and publicly guaranteed debt				Private nonguaranteed debt		Use of IMF credit	
					Total		IBRD loans and IDA credits					
	$ millions		$ millions		$ millions		$ millions		$ millions		$ millions	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	9,764	24,373	6,416	20,856	6,416	14,941	0	1,520	0	5,915	0	160
India	20,581	94,404	18,333	88,694	17,997	79,486	5,969	26,050	336	9,208	977	664
Indonesia	20,938	136,174	18,163	97,199	15,021	55,869	1,606	10,706	3,142	41,330	0	2,970
Iran, Islamic Rep.	4,500	11,816	4,500	8,462	4,500	8,256	622	421	0	207	0	0
Iraq	..	..	..	..	..	..	..	..	0	..	0	..
Ireland	..	..	..	..	..	..	..	..	..	..	..	..
Israel	..	..	..	..	..	..	..	..	..	..	..	..
Italy	..	..	..	..	..	..	..	..	..	..	..	..
Jamaica	1,913	3,913	1,505	3,109	1,430	2,921	176	431	75	188	309	118
Japan	..	..	..	..	..	..	..	..	..	..	..	..
Jordan	1,971	8,234	1,486	7,059	1,486	7,020	102	814	0	39	0	427
Kazakhstan	..	4,278	..	3,418	..	2,822	..	648	..	596	..	511
Kenya	3,383	6,486	2,489	5,433	2,052	5,108	528	2,245	437	325	254	250
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	29,480	143,373	18,236	78,517	15,933	40,241	1,836	4,580	2,303	38,276	683	11,064
Kuwait	..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	..	928	..	730	..	730	..	251	..	0	..	165
Lao PDR	350	2,320	333	2,247	333	2,247	6	358	0	0	16	66
Latvia	..	503	..	352	..	322	..	120	..	30	..	86
Lebanon	510	5,036	216	3,241	216	2,356	27	151	0	885	0	0
Lesotho	72	660	58	624	58	624	24	221	0	0	6	28
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	..	1,540	..	1,107	..	1,049	..	114	..	58	..	271
Macedonia, FYR	..	1,542	..	1,317	..	1,251	..	231	..	67	..	88
Madagascar	1,250	4,105	920	3,871	920	3,871	152	1,214	0	0	87	69
Malawi	830	2,206	634	2,073	634	2,073	156	1,409	0	0	80	106
Malaysia	6,611	47,228	5,256	32,289	4,008	16,807	504	758	1,248	15,482	0	0
Mali	727	2,945	664	2,687	664	2,687	121	939	0	0	39	176
Mauritania	840	2,453	713	2,037	713	2,037	38	378	0	0	62	113
Mauritius	467	2,472	318	1,976	294	1,187	55	126	24	789	102	0
Mexico	57,365	149,690	41,202	112,095	33,902	84,775	2,063	11,356	7,300	27,320	0	9,088
Moldova	..	1,040	..	785	..	785	..	170	..	0	..	233
Mongolia	..	718	..	643	..	643	0	97	..	0	0	48
Morocco	9,258	19,321	8,024	19,090	7,874	18,640	578	3,302	150	450	457	0
Mozambique	..	5,991	..	5,475	..	5,430	0	1,160	..	45	0	189
Myanmar	1,500	5,074	1,390	4,640	1,390	4,640	146	724	0	0	106	0
Namibia	24	..	4	..	4	..	..	..	0	..	0	..
Nepal	205	2,398	156	2,340	156	2,340	76	1,047	0	0	42	30
Netherlands	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	..	..	..	..	..	..	..	..	..	..	..	..
Nicaragua	2,190	5,677	1,668	4,819	1,668	4,819	135	392	0	0	49	27
Niger	863	1,579	687	1,427	383	1,331	66	625	305	96	16	61
Nigeria	8,921	28,455	5,368	22,926	4,271	22,631	554	2,783	1,097	295	0	0
Norway	..	..	..	..	..	..	..	..	..	..	..	..
Oman	599	3,602	436	2,570	436	2,567	14	13	0	3	0	0
Pakistan	9,931	29,664	8,520	25,902	8,502	23,565	1,150	6,572	18	2,338	674	1,281
Panama	2,975	6,338	2,271	5,418	2,271	5,074	133	209	0	344	23	142
Papua New Guinea	719	2,272	624	2,071	486	1,311	110	371	139	760	31	48
Paraguay	954	2,052	780	1,537	630	1,488	124	176	151	49	0	0
Peru	9,386	30,496	6,828	22,653	6,218	20,177	359	1,920	610	2,476	474	1,011
Philippines	17,417	45,433	8,817	32,784	6,363	25,950	960	4,374	2,454	6,834	1,044	855
Poland	..	39,889	..	36,077	..	33,666	0	2,078	..	2,412	0	0
Portugal	..	..	..	..	..	..	..	..	..	..	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	9,762	10,442	7,131	8,852	7,131	8,122	806	1,305	0	730	328	641
Russian Federation	..	125,645	..	106,275	..	104,370	0	5,053	..	1,905	..	13,231

4.18 External debt

	Total external debt		Long-term debt		Public and publicly guaranteed debt				Private nonguaranteed debt		Use of IMF credit	
	$ millions		$ millions		Total $ millions		IBRD loans and IDA credits $ millions		$ millions		$ millions	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	190	1,111	150	994	150	994	58	558	0	0	14	40
Saudi Arabia	..	..	..	..	..	..	..	..	..	..	..	..
Senegal	1,473	3,671	1,114	3,165	1,105	3,110	156	1,201	9	55	140	292
Sierra Leone	469	1,149	357	893	357	893	43	272	0	0	59	167
Singapore	..	..	..	..	..	..	..	..	..	..	..	..
Slovak Republic	..	9,989	..	5,446	..	4,658	0	228	..	788	0	249
Slovenia	..	..	..	..	..	..	..	140	..	..	..	0
South Africa	..	25,222	..	13,879	..	11,246	0	0	..	2,633	0	415
Spain	..	..	..	..	..	..	..	..	..	..	..	..
Sri Lanka	1,841	7,638	1,230	6,725	1,227	6,641	129	1,544	3	84	391	433
Sudan	5,177	16,326	4,147	9,494	3,822	8,998	236	1,204	325	496	431	797
Sweden	..	..	..	..	..	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	3,552	20,865	2,921	16,254	2,921	16,254	257	119	0	0	0	0
Tajikistan	..	901	..	797	..	669	..	50	..	128	..	30
Tanzania	5,322	7,177	3,381	6,094	3,297	6,054	440	2,340	84	41	171	246
Thailand	8,297	93,416	5,646	56,151	3,943	22,009	703	1,826	1,702	34,142	348	2,429
Togo	1,049	1,339	896	1,207	896	1,207	47	561	0	0	33	88
Trinidad and Tobago	829	2,161	712	1,583	712	1,528	57	76	0	54	0	4
Tunisia	3,527	11,323	3,390	9,610	3,210	9,427	337	1,480	180	183	0	173
Turkey	19,131	91,205	15,575	67,977	15,040	47,633	1,347	3,705	535	20,344	1,054	594
Turkmenistan	..	1,771	..	1,242	..	1,242	..	6	..	0	..	0
Uganda	689	3,708	537	3,202	537	3,202	47	1,954	0	0	89	394
Ukraine	..	10,901	..	7,410	..	6,978	..	1,111	..	432	..	2,402
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	..	..	..	..	..	..	..	..	..	..	..	..
United States	..	..	..	..	..	..	..	..	..	..	..	..
Uruguay	1,660	6,652	1,338	4,751	1,127	4,528	72	393	211	223	0	0
Uzbekistan	..	2,760	..	2,119	..	2,028	..	155	..	91	..	223
Venezuela	29,344	35,541	13,795	29,529	10,614	26,680	133	1,213	3,181	2,849	0	1,618
Vietnam	..	21,629	..	18,839	..	18,839	2	569	..	0	0	452
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	1,684	3,856	1,453	3,418	1,453	3,418	137	934	0	0	48	250
Yugoslavia, FR (Serb./Mont.)	18,486[b]	15,107[c]	15,586[b]	10,924[c]	4,580[b]	8,165[c]	1,359[b]	1,112[c]	11,005[b]	2,759[c]	760[b]	76[c]
Zambia	3,261	6,758	2,227	5,246	2,141	5,233	348	1,555	87	13	447	1,138
Zimbabwe	786	4,961	696	3,599	696	3,124	3	872	0	475	0	385
World	.. s	.. s	.. s	.. s	.. s	.. s	.. s	.. s	.. s	.. s	.. s	.. s
Low income	101,945	387,326	82,629	334,546	77,541	318,237	13,845	80,781	5,088	16,309	5,310	11,097
Middle income[d]	478,106	1,785,903	350,763	1,369,738	287,584	1,061,583	18,362	98,148	63,180	308,155	6,254	48,637
Lower middle income	..	..	..	..	..	..	..	..	..	..	..	..
Upper middle income	..	..	..	..	..	..	..	..	..	..	..	..
Low & middle income[d]	580,050	2,173,229	433,393	1,704,284	365,125	1,379,820	32,208	178,929	68,268	324,463	11,563	59,734
East Asia & Pacific	64,600	511,179	48,438	371,212	39,687	270,171	4,077	36,102	8,751	101,042	1,551	6,933
Europe & Central Asia	75,503	390,579	56,283	309,821	44,743	268,905	3,513	20,669	11,540	40,916	2,143	21,195
Latin America & Carib.	257,264	703,669	187,255	558,918	144,797	399,951	8,134	34,427	42,458	158,967	1,413	18,564
Middle East & N. Africa	83,805	193,411	61,745	149,320	61,150	145,210	3,053	11,103	595	4,110	916	2,868
South Asia	38,015	154,946	33,053	143,942	32,696	132,311	8,306	41,014	357	11,630	2,508	2,781
Sub-Saharan Africa	60,864	219,445	46,619	171,070	42,053	163,273	5,125	35,614	4,567	7,798	3,033	7,393
High income	29,480[e]	143,373[e]	18,236[e]	78,517[e]	15,933[e]	40,241[e]	1,836[e]	4,720[f]	2,303[e]	38,276[e]	683[e]	11,064[f]
Europe EMU												

a. Data prior to 1992 include Eritrea. b. Data prior to 1993 refer to the former Socialist Federal Republic of Yugoslavia. c. Data for 1997 are estimates and reflect borrowing by the former Yugoslavia that are not yet allocated to the successor republics. d. Includes data for Gibraltar not included in other tables. e. Refers only to the Republic of Korea. f. Includes data for Slovenia.

External debt 4.18

About the data

Data on the external debt of low- and middle-income economies are gathered by the World Bank through its Debtor Reporting System. World Bank staff calculate the indebtedness of developing countries using loan-by-loan reports submitted by these countries on long-term public and publicly guaranteed borrowing, along with information on short-term debt collected by the countries or from creditors through the reporting systems of the Bank for International Settlements and the Organisation for Economic Co-operation and Development (OECD). These data are supplemented by information on loans and credits from major multilateral banks and loan statements from official lending agencies in major creditor countries and by estimates from World Bank country economists and International Monetary Fund (IMF) desk officers. In addition, some countries provide data on private nonguaranteed debt. In 1997, 25 countries reported their private nonguaranteed debt to the World Bank; estimates were made for 45 additional countries known to have significant private debt. For estimates of total financial flows to developing countries see table 6.8.

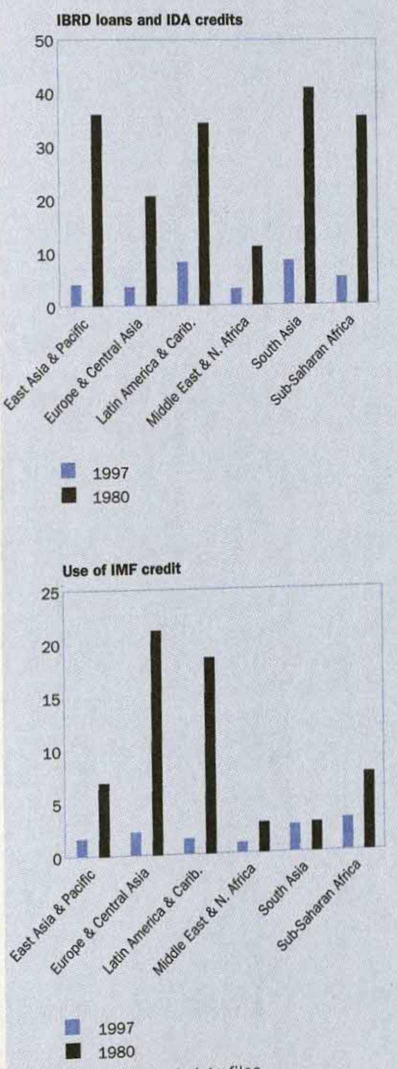
The coverage, quality, and timeliness of debt data vary across countries. Coverage varies for both debt instruments and borrowers. With a widening spectrum of debt instruments and investors and the expansion of private nonguaranteed borrowing, comprehensive coverage of long-term external debt becomes more complex. Reporting countries differ in their capacity to monitor debt, especially private nonguaranteed debt. Even data on public and publicly guaranteed debt are affected by coverage and accuracy in reporting—again, because of monitoring capacity and, sometimes, willingness to provide information. A key part that is often underreported is military debt.

Variations in reporting rescheduled debt also affect cross-country comparability. For example, rescheduling under the auspices of the Paris Club of official creditors may be subject to lags between the completion of the general rescheduling agreement and the completion of the specific, bilateral agreements that define the terms of the rescheduled debt. The World Bank estimates the effects of the general agreements and then revises the data when countries report their bilateral agreements. Other areas of inconsistency include country differences in treatment of arrears and of nonresident national deposits denominated in foreign currency.

Figure 4.18

World Bank and IMF lending expands in the regions most at risk of financial crisis

Debt outstanding and disbursed, $ billions

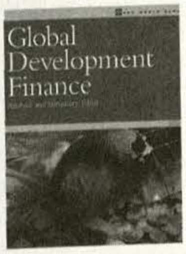


Source: World Bank data files.

Definitions

- **Total external debt** is debt owed to nonresidents repayable in foreign currency, goods, or services. It is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. • **Long-term debt** is debt that has an original or extended maturity of more than one year. It has three components: public, publicly guaranteed, and private nonguaranteed debt. • **Public and publicly guaranteed debt** comprises long-term external obligations of public debtors, including the national government and political subdivisions (or an agency of either) and autonomous public bodies, and external obligations of private debtors that are guaranteed for repayment by a public entity. • **IBRD loans and IDA credits** are extended by the World Bank Group. The International Bank for Reconstruction and Development (IBRD) lends at market rates. Credits from the International Development Association (IDA) are at concessional rates. • **Private nonguaranteed debt** comprises long-term external obligations of private debtors that are not guaranteed for repayment by a public entity. • **Use of IMF credit** denotes repurchase obligations to the IMF for all uses of IMF resources (excluding those resulting from drawings on the reserve tranche). These obligations, shown for the end of the year specified, comprise purchases outstanding under the credit tranches, including enlarged access resources, and all special facilities (the buffer stock, compensatory financing, extended fund, and oil facilities), trust fund loans, and operations under the structural adjustment and enhanced structural adjustment facilities.

Data sources



The main sources of external debt information are reports to the World Bank through its Debtor Reporting System from member countries that have received IBRD loans or IDA credits. Additional information has been drawn from the files of the World Bank and the IMF. Summary tables of the external debt of developing countries are published annually in the World Bank's *Global Development Finance* and *Global Development Finance* CD-ROM.

4.19 External debt management

	Indebtedness classification[a]	Present value of debt		Total debt service				Public and publicly guaranteed debt service		Short-term debt	
		% of GNP	% of exports of goods and services	% of GNP		% of exports of goods and services		% of central government current revenue		% of total debt	
	1997	1997	1997	1980	1997	1980	1997	1980	1997	1980	1997
Albania	L	22	99	..	1.6	..	7.1	..	..	..	6.8
Algeria	M	65	181	9.9	9.9	27.4	27.2	..	..	12.0	0.5
Angola	S	200	165	..	19.2	..	15.9	..	..	..	12.6
Argentina	S	38	352	5.5	6.3	37.3	58.7	6.1	34.2	38.2	14.6
Armenia	L	26	94	..	1.6	..	5.8	..	..	..	3.3
Australia	..	..	..	..	..	..	..	..	..	..	..
Austria	..	..	..	..	..	..	..	..	..	..	..
Azerbaijan	L	9	32	..	1.8	..	6.8	..	..	..	0.8
Bangladesh	M	20	130	1.6	1.6	23.7	10.6	7.9	..	5.0	1.2
Belarus	L	5	13	..	0.7	..	1.8	..	..	..	19.8
Belgium	..	..	..	..	..	..	..	..	..	..	..
Benin	M	46[b]	160[b]	1.4	2.6	6.3	9.1	..	..	17.3	8.4
Bolivia	S	51[b]	270[b]	..	6.1	35.0	32.5	..	23.5	11.2	8.2
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..
Botswana	L	9	..	1.6	2.1	2.1	..	4.1	..	2.7	7.1
Brazil	S	23	277	6.5	4.7	63.3	57.4	15.3	..	18.9	18.6
Bulgaria	S	96	144	..	9.6	..	14.4	..	22.6	..	7.8
Burkina Faso	M	*29*[b]	*161*[b]	1.3	2.2	5.9	11.8	8.4	..	10.6	5.1
Burundi	S	58	546	0.9	3.1	..	29.0	4.8	15.8	7.2	1.5
Cambodia	M	53	175	..	0.3	..	1.1	..	..	..	1.5
Cameroon	S	93	315	5.0	6.0	15.3	20.4	17.0	..	10.8	14.1
Canada	..	..	..	..	..	..	..	..	..	..	..
Central African Republic	S	52	244	1.3	1.3	4.9	6.2	..	..	12.6	7.1
Chad	M	35	195	0.6	2.2	8.4	12.5	..	..	4.0	2.6
Chile	M	41	140	10.2	6.0	43.1	20.4	15.2	7.3	21.2	31.6
China	L	15	63	0.5	2.1	..	8.6	..	..	0.0	21.4
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..
Colombia	M	33	178	2.9	4.9	16.0	26.6	13.2	..	33.7	18.1
Congo, Dem. Rep.	S	215	783	3.8	0.2	22.6	0.9	29.2	..	6.8	26.8
Congo, Rep.	S	247	249	7.1	6.2	10.6	6.2	9.5	..	16.2	14.9
Costa Rica	L	35	69	7.7	6.0	29.1	11.8	23.9	..	21.0	15.1
Côte d'Ivoire	S	141[b]	268[b]	14.5	14.4	38.7	27.4	35.6	..	14.2	17.0
Croatia	L	34	70	..	5.8	..	11.9	..	7.3	..	8.3
Cuba	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	L	40	66	..	8.6	..	14.1	..	18.5	..	32.9
Denmark	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic	L	26	52	5.9	3.2	25.3	6.2	16.1	..	24.0	17.7
Ecuador	S	72	223	9.0	10.1	33.9	31.0	37.2	..	26.3	13.9
Egypt, Arab Rep.	L	28	99	5.8	2.5	13.4	9.0	5.9	..	21.1	10.0
El Salvador	L	25	70	2.7	2.5	7.5	7.0	..	..	24.1	24.7
Eritrea	L	4	9	..	0.1	..	0.1	..	..	..	0.0
Estonia	L	14	17	..	1.2	..	1.4	..	1.1	..	46.8
Ethiopia[c]	S	131	791	..	1.6	7.6	9.5	4.4	..	6.9	5.6
Finland	..	..	..	..	..	..	..	..	..	..	..
France	..	..	..	..	..	..	..	..	..	..	..
Gabon	S	94	128	11.2	9.7	17.7	13.1	24.0	..	15.1	11.2
Gambia, The	M	57	97	1.7	6.7	6.2	11.6	1.4	..	17.0	3.0
Georgia	M	20	149	..	0.9	..	6.4	..	..	..	1.6
Germany	..	..	..	..	..	..	..	..	..	..	..
Ghana	S	58[b]	229[b]	3.6	7.5	13.1	29.5	10.0	..	9.4	11.3
Greece	..	..	..	..	..	..	..	..	..	..	..
Guatemala	L	21	99	1.8	2.1	7.9	9.9	5.1	..	28.4	28.1
Guinea	S	67	330	..	4.4	..	21.5	..	..	7.0	11.7
Guinea-Bissau	S	253	1,136	4.4	3.9	..	17.3	..	..	3.7	7.7
Haiti	S	21	272	1.8	1.2	6.2	15.9	13.2	..	4.6	11.1
Honduras	S	83	157	8.5	11.1	21.4	20.9	26.0	..	18.5	10.3

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	Indebtedness classification[a]	Present value of debt		Total debt service				Public and publicly guaranteed debt service		Short-term debt	
		% of GNP	% of exports of goods and services	% of GNP		% of exports of goods and services		% of central government current revenue		% of total debt	
	1997	1997	1997	1980	1997	1980	1997	1980	1997	1980	1997
Hungary	M	52	89	8.8	17.3	..	29.7	..	24.3	34.3	13.8
India	M	20	138	0.8	2.9	9.3	19.6	5.6	17.0	6.2	5.3
Indonesia	M	62	195	4.1	9.5	..	30.0	10.6	..	13.3	26.4
Iran, Islamic Rep.	L	9	58	1.0	5.1	6.8	32.2	4.7	14.8	0.0	28.4
Iraq	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	..	..	..	..	..	..	..	..	..	..
Israel	..	..	..	..	..	..	..	..	..	..	..
Italy	..	..	..	..	..	..	..	..	..	..	..
Jamaica	S	90	91	11.6	16.0	19.0	16.2	26.6	..	5.1	17.5
Japan	..	..	..	..	..	..	..	..	..	..	..
Jordan	S	110	134	5.2	9.1	11.2	11.1	25.3	..	24.6	9.1
Kazakhstan	L	19	54	..	2.3	..	6.5	..	..	..	8.2
Kenya	M	49	161	6.2	6.5	21.0	21.5	14.5	..	18.9	12.4
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	L	33	84	7.3	3.3	20.2	8.6	24.7	5.5	35.8	37.5
Kuwait	..	..	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	L	39	97	..	2.5	..	6.3	..	..	..	3.6
Lao PDR	M	53	217	..	1.6	..	6.5	..	..	0.4	0.3
Latvia	L	8	15	..	2.4	..	4.4	..	4.7	..	12.9
Lebanon	L	32	95	..	4.8	..	14.4	..	..	57.6	35.6
Lesotho	L	35	62	0.9	3.6	1.5	6.4	..	11.4	11.1	1.2
Libya	..	..	..	..	..	..	..	..	..	..	..
Lithuania	L	15	26	..	3.4	..	6.0	..	9.6	..	10.6
Macedonia, FYR	M	75	119	..	5.5	..	8.8	..	..	..	8.9
Madagascar	S	85	370	2.6	6.2	20.1	27.0	11.5	..	19.5	4.0
Malawi	M	46[b]	182[b]	7.7	3.1	27.8	12.4	28.7	..	14.0	1.2
Malaysia	M	47	46	4.0	7.6	6.3	7.5	5.8	12.0	20.5	31.6
Mali	S	72[b]	240[b]	1.0	3.2	5.1	10.5	5.3	..	3.3	2.8
Mauritania	S	169	377	7.1	10.9	17.3	24.2	..	..	7.7	12.4
Mauritius	M	55	92	4.7	6.5	9.0	10.9	14.7	19.5	10.1	20.1
Mexico	L	37	110	5.1	10.9	44.4	32.4	26.9	..	28.2	19.0
Moldova	L	52	83	..	6.8	..	10.9	..	..	..	2.1
Mongolia	M	47	89	..	6.1	..	11.7	..	..	..	3.8
Morocco	M	53	149	7.9	9.5	33.4	26.6	27.1	..	8.4	1.2
Mozambique	S	171[b]	785[b]	..	4.1	..	18.6	..	..	..	5.5
Myanmar	S	..	289	..	..	25.4	8.0	11.9	..	0.3	8.6
Namibia	..	..	..	..	..	..	..	..	..	..	..
Nepal	L	25	87	0.4	2.0	3.3	6.9	2.6	17.2	3.4	1.2
Netherlands	..	..	..	..	..	..	..	..	..	..	..
New Zealand	..	..	..	..	..	..	..	..	..	..	..
Nicaragua	S	244[b]	441[b]	5.7	17.5	22.3	31.7	26.3	..	21.6	14.6
Niger	S	56[b]	329[b]	5.7	3.3	21.7	19.5	10.6	..	18.5	5.8
Nigeria	M	72	148	1.9	3.8	4.1	7.8	..	..	39.8	19.4
Norway	..	..	..	..	..	..	..	..	..	..	..
Oman	L	..	42	4.7	..	6.4	5.9	9.7	8.8	27.2	28.7
Pakistan	M	37	203	3.9	6.5	18.3	35.2	15.4	31.5	7.4	8.4
Panama	S	87	76	14.4	18.9	6.2	16.4	48.3	..	22.9	12.3
Papua New Guinea	L	46	74	6.0	9.3	13.8	15.0	10.5	..	8.9	6.8
Paraguay	L	19	41	3.1	2.3	18.6	5.0	16.0	..	18.3	25.1
Peru	S	45	293	10.9	4.7	44.5	30.9	42.7	20.3	22.2	22.4
Philippines	M	51	88	6.7	5.3	26.6	9.2	13.1	20.5	43.4	26.0
Poland	L	27	85	..	1.9	..	6.1	..	3.2	..	9.6
Portugal	..	..	..	..	..	..	..	..	..	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..
Romania	L	29	98	..	4.6	12.6	15.7	7.4	..	23.6	9.1
Russian Federation	L	27	114	..	1.5	..	6.5	..	..	..	4.9

4.19 External debt management

	Indebtedness classification[a]	Present value of debt		Total debt service				Public and publicly guaranteed debt service		Short-term debt	
		% of GNP	% of exports of goods and services	% of GNP		% of exports of goods and services		% of central government current revenue		% of total debt	
	1997	1997	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	S	33	373	0.7	1.2	4.1	13.3	2.8	..	13.7	6.9
Saudi Arabia	..	..	..	..	..	..	..	..	..	..	..
Senegal	M	55	152	9.0	5.6	28.7	15.3	30.1	..	14.9	5.8
Sierra Leone	S	89	779	5.6	2.4	23.8	21.2	22.7	20.9	11.3	7.7
Singapore	..	..	..	..	..	..	..	..	..	..	..
Slovak Republic	M	48	82	..	7.1	..	12.2	..	..	..	43.0
Slovenia	..	..	..	..	..	..	..	..	..	..	..
South Africa	L	19	65	..	3.8	..	12.8	..	5.6	..	43.3
Spain	..	..	..	..	..	..	..	..	..	..	..
Sri Lanka	L	35	79	4.5	2.9	12.0	6.4	10.3	11.6	11.9	6.3
Sudan	S	170	2,421	3.5	0.6	25.1	9.2	9.2	..	11.6	37.0
Sweden	..	..	..	..	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	S	114	308	2.9	3.4	11.4	9.3	8.6	..	17.8	22.1
Tajikistan	L	34	86	..	1.8	..	4.6	..	..	..	8.2
Tanzania[d]	S	72	427	..	2.2	21.2	12.9	8.3	..	33.3	11.7
Thailand	M	61	120	5.0	7.8	18.9	15.4	9.5	7.0	27.8	37.3
Togo	M	60	129	4.8	3.8	9.0	8.1	11.0	..	11.5	3.3
Trinidad and Tobago	L	38	76	3.9	9.8	6.8	19.6	8.4	..	14.0	26.6
Tunisia	M	58	119	6.4	7.8	14.8	16.0	15.6	..	3.9	13.6
Turkey	M	43	142	2.3	5.5	28.0	18.4	8.4	..	13.1	24.8
Turkmenistan	L	59	219	..	9.3	..	34.7	..	..	..	29.9
Uganda	S	31[b]	239[b]	4.6	2.9	17.3	22.1	6.7	..	9.1	3.0
Ukraine	L	21	51	..	2.8	..	6.6	..	..	..	10.0
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	..	..	..	..	..	..	..	..	..	..	..
United States	..	..	..	..	..	..	..	..	..	..	..
Uruguay	M	32	133	3.1	3.8	18.8	15.4	8.8	10.1	19.4	28.6
Uzbekistan	L	11	65	..	2.1	..	12.9	..	..	..	15.2
Venezuela	M	41	127	8.7	10.1	27.2	31.3	19.1	35.7	53.0	12.4
Vietnam	S	81	168	..	3.7	..	7.8	..	..	..	10.8
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	M	56	75	..	1.9	..	2.6	..	4.0	10.8	4.9
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	11.6[e]	27.2
Zambia	S	138	374	11.4	7.3	25.3	19.9	29.6	..	18.0	5.5
Zimbabwe	M	49	136	1.0	8.0	3.8	22.0	3.9	..	11.5	19.7
World				.. w	.. w	.. w	.. w			.. w	.. w
Low income				2.4	3.7	10.3	16.9			13.7	10.8
Middle income				4.8	5.2	13.5[f,g]	17.0[f,g]			25.9[f,g]	21.8[f,g]
Lower middle income				3.6	3.9	..	..			..	..
Upper middle income				5.8	6.5	..	..			..	..
Low & middle income				4.3	5.0	13.1[f,g]	17.0[f,g]			23.9[f,g]	20.0[f,g]
East Asia & Pacific				2.4	4.3	13.4[g]	11.3[g]			26.8[g]	28.5[g]
Europe & Central Asia				..	3.7	7.4	11.5			22.6	15.2
Latin America & Carib.				6.2	6.6	36.3	35.5			26.7	17.9
Middle East & N. Africa				..	5.6	5.7	13.2			25.2	21.3
South Asia				1.3	3.2	11.7	20.3			6.5	5.3
Sub-Saharan Africa				..	4.6	7.3	12.8			18.4	18.7
High income				..	..	..	..			..	..
Europe EMU											

a. S = severely indebted, M = moderately indebted, L = less indebted. b. Data are from debt sustainability analyses undertaken as part of the Heavily Indebted Poor Countries (HIPC) Initiative. Present value estimates for these countries are for public and publicly guaranteed debt only, and export figures exclude workers' remittances. c. Data prior to 1992 include Eritrea. d. Data refer to mainland Tanzania only. e. Data prior to 1993 refer to the former Socialist Federal Republic of Yugoslavia. f. Includes data for Gibraltar not included in other tables. g. Includes data for the Republic of Korea not included in other tables.

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About the data

The indicators in the table measure the relative burden on developing countries of servicing external debt. The present value of external debt provides a measure of future debt service obligations that can be compared with the current value of such indicators as GNP and exports of goods and services. This table shows the present value of total debt service in the most recent year (1997) both as a percentage of average GNP in 1995–97 and as a percentage of average exports in the same three-year period. The ratios compare total debt service obligations with the size of the economy and its ability to obtain foreign exchange through exports. Because workers' remittances are an important source of foreign exchange for many countries, they are included in the value of exports used to calculate debt indicators. Public and publicly guaranteed debt service is compared with the size of the central government budget. The ratios shown here may differ from those published elsewhere because estimates of exports and GNP have been revised to incorporate data available as of 1 February 1999.

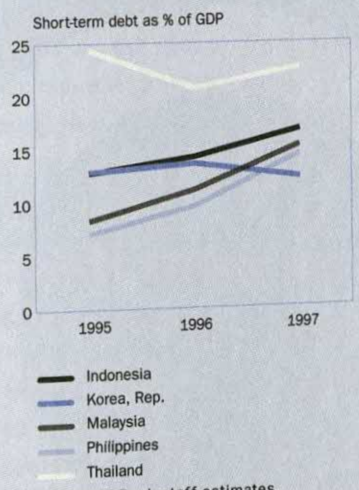
The present value of external debt is calculated by discounting the debt service (interest plus amortization) due on long-term external debt over the life of existing loans. Short-term debt is included at its face value. Data on debt are in U.S. dollars converted at official exchange rates. The discount rate applied to long-term debt is determined by the currency of repayment of the loan and is based on reference rates for commercial interest established by the Organisation for Economic Co-operation and Development (OECD). Loans from the International Bank for Reconstruction and Development (IBRD) and credits from the International Development Association (IDA) are discounted using an SDR (special drawing rights) reference rate, as are obligations to the International Monetary Fund (IMF). When the discount rate is greater than the interest rate of the loan, the present value is less than the nominal sum of future debt service obligations.

The ratios in the table are used to assess the sustainability of a country's debt service obligations, but there are no absolute rules that determine what values are too high. Empirical analysis of the experience of developing countries and their debt service performance has shown that debt service difficulties become increasingly likely when the ratio of the present value of debt to exports reaches 200 percent and the ratio of debt service to GNP exceeds 40 percent. Still, what constitutes a sustainable debt burden varies from one country to another. Countries with fast-growing economies and exports are likely to be able to sustain higher debt levels.

The World Bank classifies countries by their level of indebtedness for the purpose of developing debt management strategies. In some cases the most severely indebted countries may be eligible for debt relief under special programs such as the Heavily Indebted Poor Countries (HIPC) Initiative. Indebted countries may also apply to the Paris Club and London Club for renegotiation of obligations to public and private creditors. In 1997 countries with a present value of debt service greater than 220 percent of exports or 80 percent of GNP were classified as severely indebted (S); countries that were not severely indebted but whose present value of debt service exceeded 132 percent of exports or 48 percent of GNP were classified as moderately indebted (M); and countries that did not fall into the above two groups were classified as less indebted (L).

Figure 4.19

A growing reliance on short-term financing in East Asia



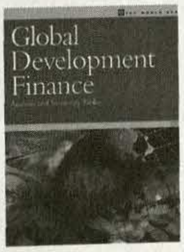
Source: World Bank staff estimates.

The financial crisis that struck East Asia in 1997 found many of the region's fastest-growing economies dependent on short-term borrowing.

Definitions

- **Indebtedness** is assessed on a three-point scale: severely indebted, moderately indebted, and less indebted. - **Present value of debt** is the sum of short-term external debt plus the discounted sum of total debt service payments due on public, publicly guaranteed, and private nonguaranteed long-term external debt over the life of existing loans. - **Total debt service** is the sum of principal repayments and interest actually paid in foreign currency, goods, or services on long-term debt, interest paid on short-term debt, and repayments (repurchases and charges) to the IMF. - **Public and publicly guaranteed debt service** is the sum of principal repayments and interest actually paid on long-term obligations of public debtors and long-term private obligations guaranteed by a public entity. - **Short-term debt** includes all debt having an original maturity of one year or less and interest in arrears on long-term debt.

Data sources



The main sources of external debt information are reports to the World Bank through its Debtor Reporting System from member countries that have received IBRD loans or IDA credits. Additional information has been drawn from the files of the World Bank and the IMF. Data on GNP and exports of goods and services are from the World Bank's national accounts files. Summary tables of the external debt of developing countries are published annually in the World Bank's *Global Development Finance* and *Global Development Finance* CD-ROM.

5

STATES AND MARKETS

We see that in today's global economy countries can invest in education and health, can put the macroeconomic fundamentals in place, can build modern communications and infrastructure, can do all this, but, if they do not have an effective financial system, if they do not have adequate regulatory supervision or adequate bankruptcy laws, if they do not have effective competition and regulatory laws, if they do not have transparency and accounting standards, their development is endangered and will not last.

James D. Wolfensohn
Address to the Board of Governors of the World Bank Group and the International Monetary Fund
Washington, D.C., 6 October 1998

Good policies are necessary for economic success and social progress—but they are not enough. Fiscal policy can achieve little if the tax administration is so weak and corrupt that it cannot collect revenue. When there is no confidence in government decisionmaking or no transparency in government budgets and monetary accounts, the economy can suffer. That is why governance—the way power is exercised in managing a country's economic and social resources for development—has come to be recognized as a major development issue. Neglected in the 1980s when policy reform seemed all-important, good governance is now seen as critical to development progress.

This point is driven home in the World Bank's new Comprehensive Development Framework, which takes a holistic approach to development. One pillar of the framework is the need for good government: an open, transparent legislative and regulatory system, a cadre of properly trained and remunerated officials, an educated and well-organized civil service, and an absolute commitment to clean government.

Why governance matters

The financial crisis in East Asia has shown that governance can be a problem even in miracle economies with high education levels, admirable investments in health care, good macroeconomic fundamentals, outward-looking policies, and solid infrastructure. There, as elsewhere, inadequately supervised financial systems, poor accounting standards, and public and private corruption have contributed to a temporary reversal of fortunes.

The term *governance* covers a wide range of attributes—transparency, accountability, freedom of information, maintenance of civil peace, curbing of corruption, the quality of the civil service, and voice, the opportunity for citizens to participate in decisions that affect them. Governance also encompasses the regulatory and institutional foundations of a market economy—systems that secure property rights, enforce contracts, guard against caprice, provide an effective judicial process, supervise modern financial systems, and insist on internationally recognized accounting and auditing standards.

Capable institutions and good policies mean sound management. According to the World Bank's *World Development Report 1997*, income per capita grew only about 0.5 percent a year in 1964–93 in countries with poor management. By contrast, in countries with strong management capabilities and good policies, income per capita grew at about 3 percent a year. Over 30 years, these differences in income growth made a huge difference in the quality of people's lives.

Another recent World Bank report, *Assessing Aid* (1998a), found that sound management—measured by the quality of the bureaucracy, the rule of law, and the pervasiveness of corruption—increases the effect of financial aid. It enhances growth and poverty reduction. And it improves social indicators beyond what good policies alone could bring. For poverty reduction, the study reveals that in a country with sound management, an extra 1 percent of real GDP in assistance adds 0.5 percentage point in growth and reduces the poverty rate (people living on less than $1 a day) by 1 percentage point. But in countries with weak management, money has much less impact. In many cases poor countries' growth and development have been held back not by a financing gap but by an "institutional gap" and a "policy gap."

Promoting good governance

Corruption is the most notorious and noxious symptom of bad governance. In a recent survey of more than 150 high-ranking public officials and key members of civil society from more than 60 developing economies, the respondents ranked public sector corruption as the most severe impediment to development and growth in their economies.

How does corruption lead to poor economic development and growth? Corruption—defined as the use of public office for private gain—includes bribery and extortion. Bribery can impede long-term foreign and domestic investment, misallocate talent to rent-seeking activities, and drive businesses underground, undercutting the state's ability to collect taxes. It can also distort government spending because government officials may base spending less on public welfare than on the opportunities for extorting bribes. With lower revenues, the state's ability to provide essential public goods, including the rule of law, is reduced.

Measuring governance—that is, quantifying how governments exercise power in managing resources for development—reveals a troubling picture. Systemic corruption hurts public welfare, taxes private sector activity, and is deeply ingrained in public institutions. In the past year the World Bank has helped Albania, Georgia, and Latvia measure corruption with new surveys to provide the basis for strategies to combat corruption and improve governance (box 5a). These countries are committed to open, transparent policymaking—collecting detailed data on corruption and sponsoring public workshops to discuss the data and the policy agenda. The first results show that in Georgia the highest levels of bribes paid by enterprises to regulators are in tax and financial inspections, in border crossings at customs, and in water and electricity services (figure 5a).

"Bank Insolvency: Bad Luck, Bad Policy, or Bad Banking?" (Caprio and Klingebiel 1997) reports that the primary causes of the most severe cases of banking sector insolvency in the past 15 years were faulty supervision and regulation, deficient management, government intervention, or some degree of politically connected or motivated lending. Why are these "microeconomic" causes of banking crises considered governance issues? Because the regulatory framework and other institutional variables define the incentive system in banks and in the environment. That in turn determines how well a banking system handles the macroeconomic shocks that come its way (figure 5b).

One thing that might have helped avert such crises is greater transparency in accounting. More reliable accounting information could have brought on corrective action earlier, easing the crisis and allowing more discriminating responses by investors. Even transparent accounting and reliable financial reporting are no guarantee against crises—for Sweden and the United States, considered to be among the world's most transparent, have endured banking crises in recent years.

Box 5a

The World Bank's anticorruption strategy

Corruption undermines the work of the World Bank and other development agencies. To combat it, the World Bank has adopted a four-part strategy:

Preventing fraud and corruption in World Bank projects. We have established an oversight committee and instituted an internal corruption hotline. We have also reformed our procurement practices and improved our supervision of projects. And having strengthened professional ethics, we are expanding our remedies to include blacklisting firms, auditing firm accounts, and developing a broader anticorruption strategy to build transparency into project design and support in-country capacity building.

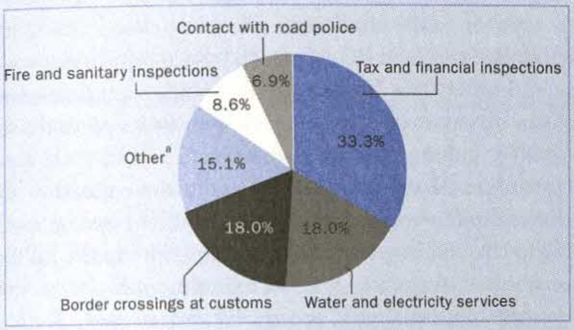
Helping countries that request assistance in curbing corruption. We are developing a multipronged anticorruption strategy covering institutional reforms, civil service, legal and judicial issues, economic policy, financial controls, and public oversight and civil society. Countries with active assistance programs include Albania, Bangladesh, Benin, Bolivia, Ethiopia, Georgia, Jordan, Latvia, Mauritius, Nicaragua, Tanzania, Uganda, Ukraine, and Yemen. Those just beginning include Bulgaria, Indonesia, Russia, and Thailand.

Mainstreaming anticorruption work in the World Bank. Through our country assistance strategies, country lending, policy work, research, and training, we are making anticorruption activities part of our regular business.

Supporting international efforts to curb corruption worldwide. We are building partnerships for cross-border issues and in-country collaboration with the Organisation for Economic Co-operation and Development (OECD), the United Nations Development Programme (UNDP), bilateral donors, multilateral development banks, nongovernmental organizations (NGOs), and other regional organizations.

Figure 5a

Where does corruption occur most in Georgia?

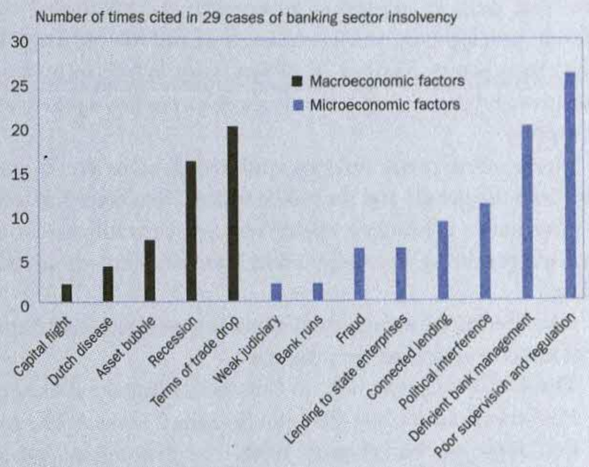


a. *Other* comprises export or import permits (3.7%), building permits (3.3%), enterprise registration (3.2%), phone line installation (1.8%), weights and measurements inspections (1.1%), state banking services (1.1%), registration of property ownership (0.5%), procurement or privatization clearances (0.2%), and lease of state-owned commercial real estate (0.2%).

Source: World Bank, Georgian Opinion Research Bureau International survey of 350 enterprises, May 1998.

Figure 5b

Microeconomic factors played the biggest part in recent banking crises



Source: Caprio and Klingebiel 1997.

Another approach to improving governance is to give citizens more voice. New communications technologies such as the Internet enable people to come together and discuss concerns in "virtual meetings," sharing ideas and communicating quickly and effectively with governments.

Developing data on governance

Promoting good governance is one of the toughest, most complicated development challenges. But because corruption and financial crises flourish in the dark—and a lack of transparency imperils effective governance—the way forward is to build a social consensus based on good information.

Data on governance from private rating agencies and public policy research organizations are generally based on surveys or on polls of experts on governance issues. Because all countries are measured by the same standard, cross-country comparisons are encouraged. But for the same reason, such measures are sometimes controversial, and knowledgeable observers can disagree with the outcomes. All ratings are subjective, reflecting external perceptions that do not always capture the situation in a country. And they may not take into account the role of historical and cultural circumstances in development. Moreover, the choice of what to rate and how to rate it may reflect biases of the rating agency and the clients it serves.

Recent advances in data collection—particularly in survey methods—have greatly improved our understanding of what causes corruption and mismanagement, how they affect development, and how they can be combated. But many questions remain. How does one estimate the size and scope of something as hidden as corruption? And how does one start to change the attitudes and incentives of public and private actors and the entrenched ways of doing business that have brought about poor governance in many countries? One successful technique being developed in the World Bank is to survey the parties to corruption directly and simultaneously—including household members, enterprise managers, and public officials. The surveys ask them about the costs and private returns of paying bribes to obtain public services, special privileges, and government jobs.

Such information can identify activities and agencies where corruption is concentrated, educate the public about the economic and social costs of corruption, and help in developing an anticorruption agenda. But governance needs to be assessed with care, taking into account the historical and cultural factors that shape society.

The mere act of quantifying poor governance is a great aid to public debate, for data are more than passive tools for research. Data on poor governance—well gathered, analyzed, and complemented with hard financial data—are almost impossible for governments to ignore. A simple chart can be seized on by the media, opposition parties, and groups in civil society to stir public debate.

Indeed, governments sometimes welcome data on what citizens think of various schemes and services. A nongovernmental organization in Bangalore, India, devised a citizens scorecard on the quality of city services, which city authorities have accepted as a basis for improvements. Unresponsive government is sometimes the result of a lack of data.

Exemplary efforts for the future

The opportunities—and the need—to address governance issues are greater than ever. New global standards of behavior are emerging, driven partly by changing attitudes toward bribery in industrial countries and partly by heightened awareness in developing countries of the costs of poor management and corruption. The costs are high indeed. Macroeconomic stability may be undermined. Foreign private capital flows are affected. Small enterprises are hurt by the rising cost of doing business. The environment may be endangered. And the poor suffer. Unless governments, working with civil society and the private sector, can blaze new trails in improving governance and combating corruption, development will be endangered and will not last. The World Bank stands ready to do all that it can to help its member countries and partners increase their efforts in the fight against corruption.

Ideas, information, analysis, and action plans are coming from both the private and the public sectors. New empirical work on governance is bringing researchers and practitioners closer together, providing new insights and informing and influencing policy.

Consider these new efforts to improve governance and implement anticorruption action programs:

- The OECD's Convention on Combating Bribery of Foreign Public Officials in International Business Transactions came into force on 15 February 1999. The convention permits OECD and other countries to move in a coordinated manner to adopt national legislation making it a crime to bribe foreign public officials. It provides a broad definition of bribery, requires countries to impose dissuasive sanctions, and commits them to providing mutual legal assistance.
- The Development Assistance Committee (DAC) of the OECD—in the *DAC Orientations on Participatory Development and Good Governance* (OECD 1995)—provides a framework to help strengthen partner countries' capacities for good governance. The building blocks of the framework emphasize the need for good governance, the rule of law and respect for human rights, and the development of a strong civil society as a basis for long-term stability.
- Transparency International is dedicated to increasing government accountability and curbing both international and national corruption. Its annual Corruption Perception Index, a joint initiative with Göttingen University, is a "poll of polls" prepared from seven sources. The results represent the subjective evaluation of the degree of corruption in the country by businessmen, risk analysts, and (to a limited extent) the public. Transparency International has also devised the Integrity Pact, a concrete program to exclude corruption from procurement contracts involving multinational companies and the governments of developing countries. Such pacts have already been implemented in three Latin American countries.
- The International Monetary Fund's (IMF) approach to promoting good governance is to maximize the transparency of member governments' financial operations and to create systems that minimize the scope for making ad hoc decisions. In consultations with member governments on exchange rate arrangements and in IMF-supported programs, governance issues within the IMF's mandate and expertise are treated more comprehensively. The IMF is also advocating policies and developing institutions and administrative systems to eliminate the opportunity for rent seeking, corruption, and fraudulent activity. And for an evenhanded treatment of governance issues in all member countries, it is collaborating with other multilateral institutions, particularly the World Bank, to make better use of complementary expertise.

  Other IMF initiatives include the Dissemination Standards Bulletin Board, which provides information about the Special Data Dissemination Standard and the General Data Dissemination System. The standard was established in 1996 to guide countries that have, or might seek, access to international capital markets in the dissemination of economic and financial data to the public. The system was established in 1997 to guide countries in providing the public with economic, financial, and sociodemographic data that are comprehensive, timely, accessible, and reliable.

  The IMF's *Code of Good Practices on Fiscal Transparency—Declaration on Principles* (1998a) has several key objectives. The roles and responsibilities in government should be clear. Information on government activities should be provided to the public. Budget preparation, execution, and reporting should be undertaken openly. And fiscal information should be subject to independent assurances of integrity. The code will facilitate surveillance of economic policies by country authorities, financial markets, and international institutions.
- The Asian Development Bank (ADB) outlines its three main objectives in "Governance: Sound Development Management" (1995). The first is to promote competitive markets and efficient, effective, accountable, and transparent public administration. The second is to support promising anticorruption efforts case by case and to improve the quality of dialogue with developing member countries on a range of governance issues, including corruption. The third is to ensure that ADB projects and staff adhere to the highest ethical standards.
- The United Nations Development Programme's Programme for Accountability and Transparency supports good governance efforts and initiatives in two main areas. Financial management and accountability systems to improve records management, accounting, and external auditing, and integrity improvement initiatives aimed at institutional development and reform, create efficient public and private sector management systems, facilitate participation in decision-making and governance, and encourage closer cooperation with international and local organizations.
- The U.S. Agency for International Development has identified anticorruption as a priority in its development agenda. Working with other bilateral and multilateral donors, its Center for Democracy and Governance has developed the *Handbook on Fighting Corruption* (1999), which presents a framework for addressing corruption and other forms of criminal activity. USAID is raising awareness about the costs of corruption by sponsoring integrity workshops and fostering anticorruption NGOs. It is promoting good governance by providing training and technical assistance for audit institutions and anticorruption agencies. It is strengthening judicial systems by supporting the drafting of new criminal and

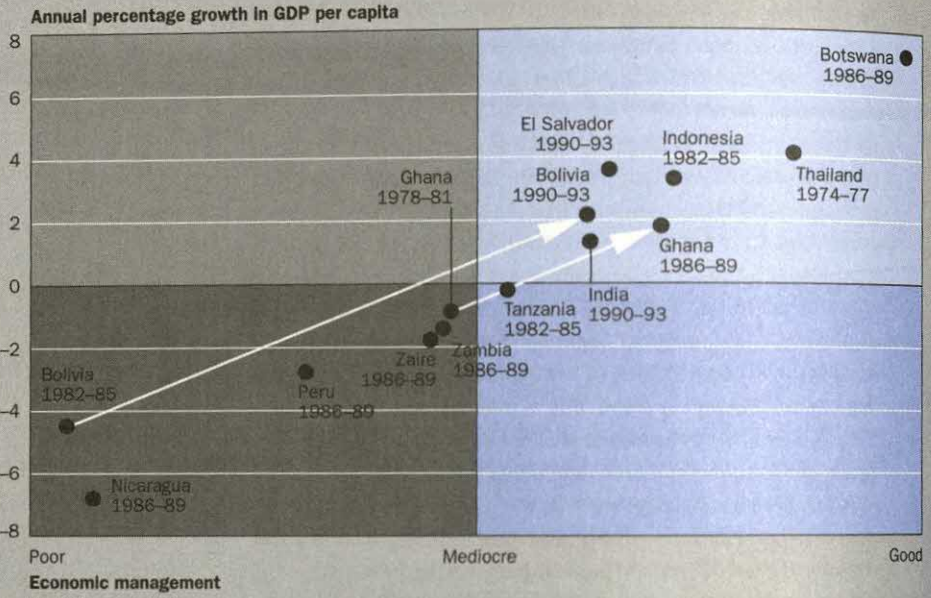
anticorruption laws and training prosecutors and judges. And it is discouraging the government's control over the economy where such controls create opportunities for abuse and impede economic growth.

- The International Chamber of Commerce's *Extortion and Bribery in International Business Transactions—Rules and Recommendations* (1996) includes rules of conduct that are to be voluntarily accepted and self-regulated by international business—and supported by governments. The basic principles are that all enterprises should conform to the relevant laws and regulations of the countries in which they operate—and observe both the letter and the spirit of these rules of conduct. The rules cover extortion, bribery and kickbacks, payments to agents, financial recording and auditing, responsibilities of enterprises, political contributions, and company codes.
- The *Guideline for Governmental Financial Reporting* (exposure draft, 1998) of the International Federation of Accountants' Public Sector Committee assists in harmonizing the accounting principles and practices of governments around the world. The intention is to improve the comparability of information both within and between jurisdictions and to provide useful guidance for governments wishing to provide high-quality financial information. The committee's guidelines should facilitate the choice and adoption of a particular basis of accounting by a government. They should also ensure that standard-setters and preparers of financial statements have a common understanding of each basis.
- The U.K. Committee on the Financial Aspects of Corporate Governance (also known as the Cadbury Committee), in its 19-point Code of Best Practice, requires listed companies incorporated in the United Kingdom to include a statement in their annual reports on whether they have complied with the code. The key safeguards: properly constituted boards, separated functions of chairman and of chief executive, audit committees, vigilant shareholders, and financial reporting and auditing systems that provide full and timely disclosure. The code recognizes that no system of corporate governance can be proof against fraud or incompetence; the test is how quickly such aberrations can be brought to light. The code—along with similar ones from the Toronto, New York, and Australian stock exchanges—can serve as a model for stock markets in emerging economies.

All this is cause for optimism—and commitment.

Countries with better policies can grow faster—as Bolivia and Ghana show.

Economic management and growth in selected developing countries

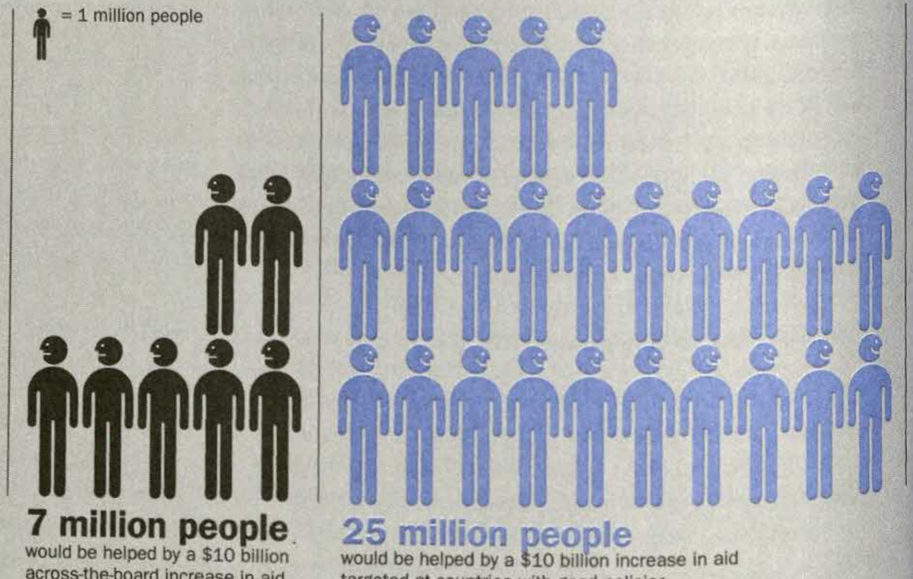


Source: World Bank 1998a.

GOVERNANCE

Aid targeted at countries with good policies lifts more people out of poverty.

Aid effectiveness

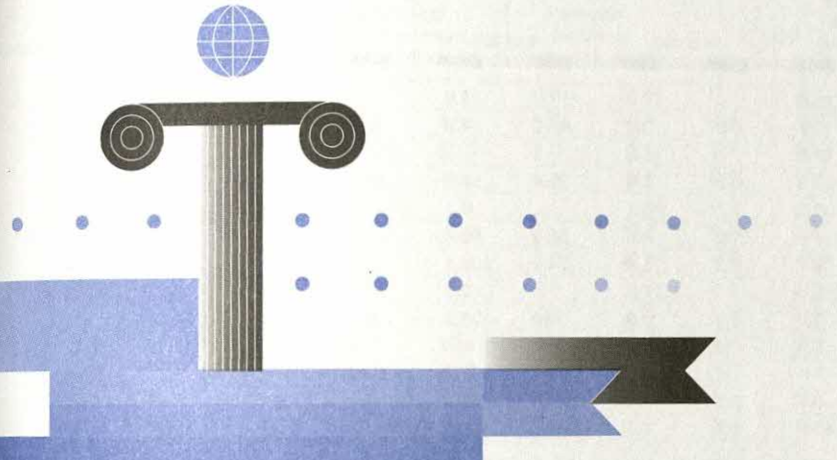


7 million people would be helped by a $10 billion across-the-board increase in aid.

25 million people would be helped by a $10 billion increase in aid targeted at countries with good policies.

Source: World Bank 1998a.

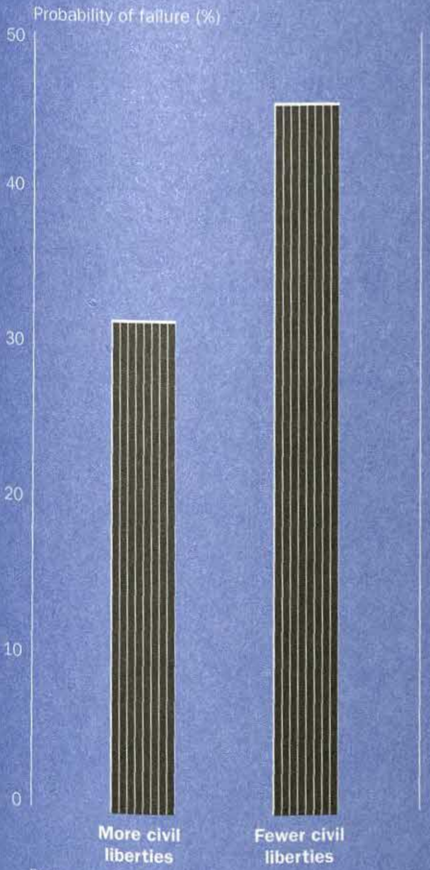
Countries that pursue good policies with sound institutions perform better in economic growth and poverty reduction. That translates into improvements in the lives of people—more food on the table, healthier babies, and more children in school.



Governance: the way power is exercised in managing a country's economic and social resources for development.

Investment projects are more effective in countries where citizens enjoy civil liberties, as measured by people's freedom to express their views.

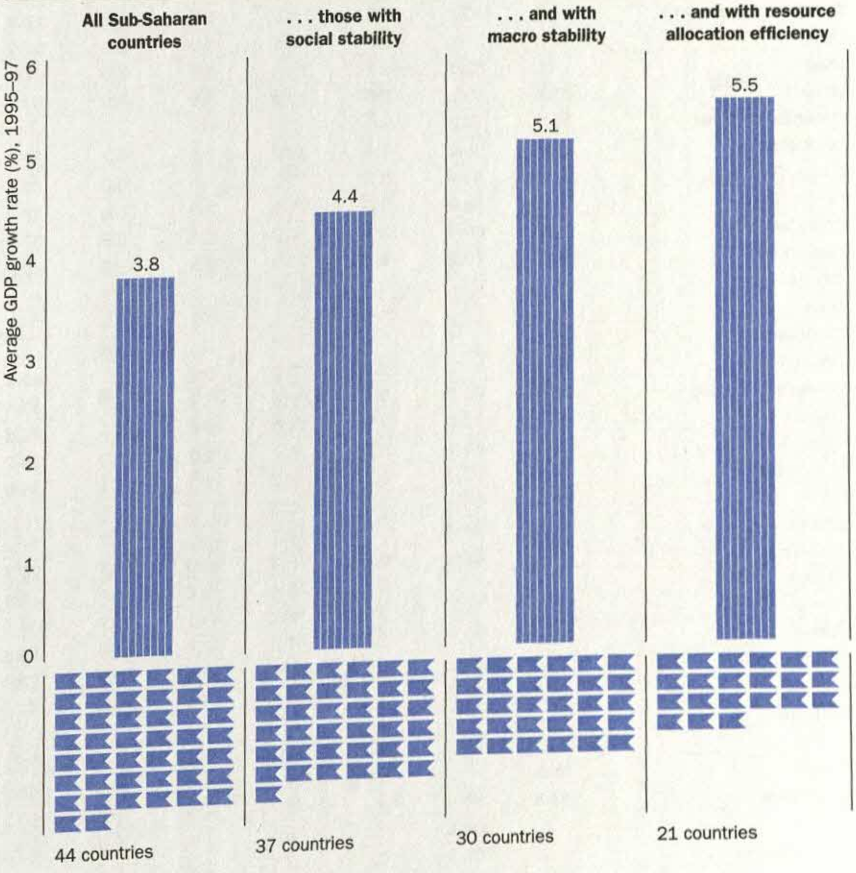
Civil liberties and the probability of World Bank project failure



Source: World Bank 1998a.

Civil peace, macroeconomic stability, and efficient resource allocation play a major part in improving economic performance. In Sub-Saharan Africa in the past few years, countries that sustained good governance and good economic policies had higher growth than those affected by conflict and instability.

Accounting for growth in Sub-Saharan Africa



Source: Bhattasali 1998.

5.1 Credit, investment, and expenditure

	Private investment		Foreign direct investment				Credit to private sector		Private non-guaranteed debt		Central government expenditure	
	% of gross domestic fixed investment		% of gross domestic investment		% of GDP		% of GDP		% of external debt		% of GDP	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1996**
Albania	..	..	..	16.0	..	2.0	..	3.8	..	0.0	..	*31.0*
Algeria	67.4	72.5	2.1	0.1	0.8	0.0	42.2	4.0	0.0	0.0	..	29.7
Angola	..	82.7	..	18.5	..	4.6	..	..	..	0.0	..	..
Argentina	..	94.2	3.5	10.2	0.9	2.0	25.4	19.5	24.3	20.6	18.2	14.0
Armenia	..	53.7	..	33.3	..	3.1	..	6.1	..	0.0	..	..
Australia	73.5	*81.8*	4.6	*6.9*	1.2	2.3	51.9	80.6	..	..	22.7	26.3
Austria	..	..	1.1	*8.2*	0.3	1.2	74.2	103.1	..	..	36.6	41.7
Azerbaijan	..	..	..	52.6	..	14.8	..	2.1	..	0.0	..	..
Bangladesh	*57.7*	67.8	0.0	1.6	0.0	0.3	6.0	23.3	0.0	0.0	7.4	..
Belarus	..	..	..	3.4	..	0.9	..	8.6	..	2.0	..	33.9
Belgium	..	..	..	..	..	..	28.8	67.4	..	..	50.1	*48.2*
Benin	..	59.5	2.0	0.8	0.3	0.1	28.6	5.7	0.0	0.0	..	..
Bolivia	..	58.1	10.2	40.3	1.7	7.5	17.3	50.2	3.4	8.1	..	22.8
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	62.1	..	30.5	7.6	10.8	2.0	11.3	9.9	0.0	0.0	31.8	39.4
Brazil	89.8	88.7	3.5	11.3	0.8	2.4	42.5	30.8	23.2	36.6	20.2	*33.8*
Bulgaria	85.9	..	..	41.7	..	4.9	..	12.6	..	4.3	..	48.1
Burkina Faso	..	52.4	0.0	0.0	0.0	0.0	16.7	11.8	0.0	0.0	12.2	..
Burundi	8.1	37.3	0.0	1.5	0.0	0.1	9.8	16.5	0.0	0.0	21.5	27.7
Cambodia	..	68.9	..	41.4	..	6.7	..	7.0	..	0.0	..	..
Cameroon	77.8	93.7	9.2	3.1	1.9	0.5	29.5	7.1	6.9	2.1	15.7	*12.7*
Canada	87.4	*86.3*	9.4	*6.5*	2.2	1.2	68.0	91.8	..	..	21.1	*24.2*
Central African Republic	46.5	40.2	9.5	6.0	0.7	0.5	13.9	4.1	0.0	0.0	*22.0*	..
Chad	..	..	0.0	4.8	0.0	0.9	17.2	3.1	0.0	0.0	..	..
Chile	..	80.9	3.7	26.1	0.8	7.0	46.9	61.5	38.8	54.6	28.0	21.0
China	43.4	49.1	0.0	12.8	0.0	4.9	53.4	103.1	0.0	1.6	..	8.0
Hong Kong, China	85.1	*86.8*	..	..	..	..	..	175.2	..	..	..	..
Colombia	58.2	59.1	2.5	33.2	0.5	6.2	30.5	41.8	7.4	33.8	13.4	..
Congo, Dem. Rep.	42.4	*64.4*	0.0	0.2	0.0	0.0	2.8	*1.1*	0.0	0.0	12.4	*8.3*
Congo, Rep.	..	83.9	6.6	1.5	2.3	0.4	15.5	7.9	0.0	0.0	49.4	..
Costa Rica	61.3	80.0	4.1	2.2	1.1	0.6	27.9	19.5	15.0	4.8	25.0	30.6
Côte d'Ivoire	53.2	70.2	3.5	20.0	0.9	3.2	40.8	19.4	27.0	13.3	31.7	..
Croatia	..	*59.6*	..	*12.4*	..	*1.8*	..	*30.1*	..	26.7	..	46.7
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	..	..	7.3	..	2.5	..	67.5	..	9.8	..	36.4
Denmark	..	..	*1.0*	2.2	*0.2*	1.7	41.2	32.2	..	..	38.6	*41.4*
Dominican Republic	68.4	83.0	5.6	11.0	1.4	2.7	30.8	28.2	12.7	0.0	16.9	15.6
Ecuador	59.7	82.9	2.3	14.5	0.6	2.9	22.8	37.5	18.7	2.3	14.2	*15.7*
Egypt, Arab Rep.	*30.1*	68.4	8.7	6.7	2.4	1.2	15.2	46.6	1.4	0.2	50.3	*34.3*
El Salvador	44.8	77.0	1.2	0.7	0.2	0.1	33.6	40.2	17.6	1.4	..	..
Eritrea	..	53.8	..	0.0	..	0.0	..	..	..	0.0	..	..
Estonia	..	*74.4*	..	19.1	..	5.7	..	25.6	..	12.6	..	33.8
Ethiopia	..	56.6	*0.0*	0.4	*0.0*	0.1	*20.1*	23.1	0.0	0.0	*19.9*	..
Finland	..	..	0.2	5.4	0.1	1.8	48.5	54.5	..	..	28.1	40.1
France	..	..	2.0	*8.4*	0.5	1.7	104.8	80.8	..	..	39.5	46.9
Gabon	80.1	72.5	2.7	–7.4	0.7	–1.9	15.8	9.0	0.0	0.0	36.5	..
Gambia, The	*38.3*	52.4	0.0	16.6	0.0	2.9	23.9	10.7	0.0	0.0	31.7	..
Georgia	..	84.0	..	13.3	..	1.0	..	..	..	0.0	..	*9.7*
Germany	..	..	..	*–0.5*	..	0.0	..	108.7	..	..	..	33.7
Ghana	..	49.4	6.2	7.8	0.4	1.9	2.2	8.2	0.7	4.5	10.9	..
Greece	51.5	..	5.9	*6.4*	1.4	*0.9*	43.9	*35.1*	..	..	29.3	32.8
Guatemala	63.8	80.4	8.9	3.7	1.4	0.5	16.2	20.1	23.9	2.5	14.3	..
Guinea	..	68.5	..	0.1	..	0.0	..	4.4	0.0	0.0	..	..
Guinea-Bissau	..	25.5	0.0	3.1	0.0	0.8	..	*5.7*	0.0	0.0	..	..
Haiti	..	51.0	5.3	1.0	0.9	0.1	15.7	15.5	0.0	0.0	17.4	..
Honduras	62.1	70.3	0.9	8.5	0.2	2.7	28.8	31.6	13.0	5.5	..	..

Credit, investment, and expenditure 5.1

	Private investment		Foreign direct investment				Credit to private sector		Private nonguaranteed debt		Central government expenditure	
	% of gross domestic fixed investment		% of gross domestic investment		% of GDP		% of GDP		% of external debt		% of GDP	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1996**
Hungary	..	..	0.0	16.6	0.0	4.5	*48.3*	*22.3*	0.0	24.3	*56.2*	43.2
India	55.5	72.6	0.2	3.7	0.0	0.9	25.4	25.7	1.6	9.8	13.3	15.8
Indonesia	..	*60.5*	1.0	7.0	0.2	2.2	8.8	61.0	15.0	30.4	22.1	14.6
Iran, Islamic Rep.	..	..	0.0	*0.1*	0.0	*0.0*	43.8	*23.2*	0.0	1.7	35.7	*23.2*
Iraq	..	..	..	..	0.0	..	..	..	..	..	..	..
Ireland	..	..	..	*20.7*	1.4	3.6	44.0	*77.1*	..	..	45.1	*38.1*
Israel	..	..	1.0	12.7	0.2	2.8	70.8	75.3	..	..	72.8	48.7
Italy	..	..	0.5	*1.7*	0.1	0.3	55.9	51.5	..	..	41.3	49.5
Jamaica	..	..	6.6	9.6	1.0	3.3	21.9	29.4	3.9	4.8	41.5	..
Japan	69.8	*70.5*	0.1	*0.0*	0.0	0.1	132.7	201.1	..	..	18.4	..
Jordan	51.3	84.0	2.3	1.1	0.9	0.3	51.0	77.8	0.0	0.5	41.3	35.0
Kazakhstan	..	..	..	38.2	..	6.0	..	5.2	..	13.9	..	..
Kenya	54.7	61.8	3.7	1.0	1.1	0.2	29.5	34.9	12.9	5.0	25.3	28.9
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	86.0	..	0.0	1.8	0.0	0.6	51.6	85.3	7.8	26.7	17.2	18.6
Kuwait	..	..	0.0	0.4	0.0	0.1	37.7	56.8	..	..	27.7	45.2
Kyrgyz Republic	..	94.9	..	13.1	..	2.8	..	..	..	0.0	..	..
Lao PDR	..	..	..	17.9	..	5.1	..	12.7	0.0	0.0	..	..
Latvia	..	89.2	..	47.8	..	9.4	..	10.7	..	6.0	..	31.0
Lebanon	..	79.3	..	3.8	..	1.0	..	69.6	0.0	17.6	..	37.9
Lesotho	..	81.8	2.9	3.6	1.2	3.1	9.8	16.7	0.0	0.0	*45.3*	55.2
Libya	8.3	..	–13.9	..	–3.1	..	11.2	..	..	..	..	..
Lithuania	..	88.2	..	13.9	..	3.7	..	9.6	..	3.7	..	25.0
Macedonia, FYR	..	91.2	..	3.5	..	0.7	..	..	..	4.3	..	..
Madagascar	..	46.5	–0.2	3.4	0.0	0.4	19.2	10.0	0.0	0.0	..	17.3
Malawi	21.4	27.7	3.1	0.6	0.8	0.1	20.7	3.9	0.0	0.0	34.6	..
Malaysia	62.6	72.9	12.5	12.1	3.8	5.2	49.9	161.0	18.9	32.8	28.5	21.9
Mali	..	54.6	0.9	2.5	0.1	0.6	23.0	13.5	0.0	0.0	20.6	..
Mauritania	..	78.3	10.6	1.6	3.8	0.3	31.0	23.0	0.0	0.0	..	..
Mauritius	64.0	73.4	0.5	4.4	0.1	1.2	21.6	50.5	5.1	31.9	27.2	22.4
Mexico	57.0	81.5	3.6	11.7	1.0	3.1	19.7	15.3	12.7	18.3	15.7	15.5
Moldova	..	86.2	..	13.3	..	3.2	..	7.2	..	0.0	..	..
Mongolia	..	..	..	3.6	..	0.8	..	7.1	..	0.0	..	21.6
Morocco	..	70.4	2.0	17.4	0.5	3.6	27.0	33.5	1.6	2.3	33.1	*33.3*
Mozambique	..	66.1	..	4.3	..	1.3	..	16.3	..	0.8	..	..
Myanmar	*20.6*	55.0	..	..	..	..	5.5	6.2	0.0	0.0	15.8	10.1
Namibia	42.0	62.2	0.0	28.8	0.0	5.7	..	52.6	..	..	..	..
Nepal	60.2	65.8	0.0	2.2	0.0	0.5	8.6	25.0	0.0	0.0	14.3	17.5
Netherlands	85.1	*86.3*	6.0	*9.9*	1.3	2.4	93.6	112.2	..	..	52.9	48.0
New Zealand	69.2	*87.2*	3.8	*11.1*	0.8	1.4	18.4	100.6	..	..	38.3	31.9
Nicaragua	..	*38.6*	0.0	*15.6*	0.0	4.3	48.3	*39.6*	0.0	0.0	30.4	*33.2*
Niger	20.1	45.3	7.0	1.0	2.0	0.1	17.1	3.3	35.3	6.1	18.6	..
Nigeria	..	44.0	–5.4	25.2	–1.2	3.9	12.2	8.2	12.3	1.0	..	..
Norway	70.3	..	0.3	*8.7*	0.1	2.3	51.4	77.5	..	..	34.4	36.8
Oman	34.1	..	7.4	*4.0*	1.6	*0.4*	13.7	*29.2*	0.0	0.1	38.5	*42.4*
Pakistan	36.1	65.4	1.4	7.6	0.3	1.2	24.0	27.2	0.2	7.9	17.5	23.8
Panama	..	*83.8*	–4.4	*9.9*	–1.2	*2.9*	58.1	*80.7*	0.0	5.4	30.5	27.4
Papua New Guinea	58.6	84.9	11.8	11.6	3.0	4.3	17.6	22.9	19.3	33.4	34.4	*29.4*
Paraguay	85.1	82.0	2.2	10.8	0.7	2.5	18.4	23.2	15.8	2.4	9.9	..
Peru	75.6	84.7	0.4	12.9	0.1	3.2	12.9	22.2	6.5	8.1	19.5	16.5
Philippines	69.0	..	–1.1	6.0	–0.3	1.5	42.2	62.3	14.1	15.0	13.4	18.5
Poland	..	86.6	..	16.3	..	3.6	6.4	18.1	..	6.0	..	42.2
Portugal	..	..	1.6	*2.7*	0.5	1.7	73.3	76.1	..	..	33.1	41.6
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	..	..	16.2	..	3.5	..	..	0.0	7.0	44.8	31.4
Russian Federation	..	76.6	..	6.4	..	1.4	..	8.7	..	1.5	..	*24.7*

5.1 Credit, investment, and expenditure

	Private investment		Foreign direct investment				Credit to private sector		Private non-guaranteed debt		Central government expenditure	
	% of gross domestic fixed investment		% of gross domestic investment		% of GDP		% of GDP		% of external debt		% of GDP	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1996**
Rwanda	..	16.7	8.7	0.5	1.4	0.1	5.7	8.1	0.0	0.0	14.3	..
Saudi Arabia	..	..	–9.4	*–4.4*	–2.0	*–0.8*	22.8	59.5	..	..	..	..
Senegal	58.1	70.2	4.1	3.5	0.5	0.7	42.7	16.3	0.6	1.5	23.3	..
Sierra Leone	..	..	..	–9.5	–1.6	0.5	7.2	3.4	0.0	0.0	26.5	14.8
Singapore	75.6	..	22.8	24.0	10.5	9.0	81.0	112.9	..	..	20.0	21.0
Slovak Republic	..	..	..	2.4	..	0.8	..	44.2	..	7.9	..	..
Slovenia	..	90.4	..	7.3	..	1.8	..	28.3	..	..	..	..
South Africa	50.8	72.9	..	8.4	..	1.3	56.9	135.7	..	10.4	22.1	34.7
Spain	..	..	3.0	*5.4*	0.7	1.0	77.5	80.7	..	..	26.5	*36.8*
Sri Lanka	77.4	77.6	3.2	11.7	1.1	2.8	17.2	24.1	0.2	1.1	41.4	27.7
Sudan	35.7	..	0.0	..	0.0	0.0	13.2	2.4	6.3	3.0	17.4	..
Sweden	..	*79.7*	0.9	*15.0*	0.2	4.3	78.0	40.9	..	..	39.3	46.1
Switzerland	..	..	..	*5.9*	..	*1.2*	108.7	168.9	..	..	19.2	26.3
Syrian Arab Republic	36.1	..	0.0	1.5	0.0	0.4	5.7	10.0	0.0	0.0	48.2	23.8
Tajikistan	..	..	..	*5.1*	..	*0.8*	..	..	..	14.2	..	..
Tanzania	..	..	..	11.2	..	2.3	..	3.9	1.6	0.6	..	..
Thailand	68.1	67.7	2.0	7.0	0.6	2.4	41.7	129.8	20.5	36.5	18.8	16.5
Togo	28.3	85.7	13.1	0.0	3.7	0.0	27.5	18.0	0.0	0.0	30.8	..
Trinidad and Tobago	..	86.7	9.7	26.5	3.0	5.8	28.7	41.0	0.0	2.5	30.9	*28.3*
Tunisia	46.9	49.3	9.1	6.3	2.7	1.7	46.4	64.5	5.1	1.6	31.6	32.6
Turkey	..	78.5	0.1	1.7	0.0	0.4	13.6	26.3	2.8	22.3	21.3	26.9
Turkmenistan	..	..	..	..	..	*2.5*	..	*17.5*	..	0.0	..	..
Uganda	..	63.6	0.0	17.9	0.0	2.7	3.9	4.3	0.0	0.0	6.2	..
Ukraine	..	0.0	..	6.2	..	1.3	..	2.5	..	4.0	..	..
United Arab Emirates	..	..	..	..	..	..	22.9	*50.0*	..	..	12.1	*11.8*
United Kingdom	70.0	*87.0*	11.2	*14.1*	1.9	3.0	27.6	123.9	..	..	38.3	*41.7*
United States	86.5	*85.9*	3.1	*6.0*	0.6	1.2	80.3	126.8	..	..	22.0	22.2
Uruguay	..	72.1	16.5	6.3	2.9	0.8	37.2	31.1	12.7	3.4	21.8	31.4
Uzbekistan	..	..	..	6.0	..	1.1	..	..	..	3.3	..	..
Venezuela	51.5	43.6	0.3	32.9	0.1	5.8	48.2	14.3	10.8	8.0	18.7	16.9
Vietnam	..	79.7	..	25.0	..	7.2	..	10.6	..	0.0	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	63.2	..	–11.5	..	–2.4	..	4.6	0.0	0.0	..	32.8
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	59.5[a]	18.3	..	..
Zambia	..	62.6	6.8	12.2	1.6	1.8	19.9	8.0	2.7	0.2	37.1	21.4
Zimbabwe	87.3	85.5	0.1	4.2	0.0	0.8	26.6	37.6	0.0	9.6	27.9	..
World	**74.7 w**	***76.9* w**	**2.4 w**	***5.1* w**	**0.6 w**	**1.1 w**	**69.5 w**	**109.7 w**	**.. w**	**.. w**	**25.4 w**	***29.8* w**
Low income	53.1	70.1	0.0	6.0	0.0	1.3	20.7	21.6	5.0	4.2	14.8	17.4
Middle income	..	70.1	1.0	10.8	0.5	1.3	32.7	50.8	12.9	18.0	..	*19.9*
Lower middle income	..	58.6	1.2	10.7	0.3	1.3	36.8	62.9	..	..	..	*17.1*
Upper middle income	..	83.1	0.9	11.0	0.6	1.3	30.2	39.3	..	..	20.1	*27.9*
Low & middle income	..	70.1	0.8	10.3	0.4	1.3	30.6	47.2	11.6	15.7	..	*19.5*
East Asia & Pacific	50.5	54.6	1.1	11.1	0.4	1.0	41.5	99.0	11.7	21.3	..	11.6
Europe & Central Asia	..	75.1	..	8.3	..	1.9	*16.9*	16.8	15.3	10.5	..	*29.9*
Latin America & Carib.	70.0	84.1	3.2	13.1	0.8	1.4	32.1	26.6	16.5	22.6	19.1	*25.6*
Middle East & N. Africa	..	..	0.9	*0.9*	0.2	*0.5*	28.6	45.4	0.7	2.1	..	..
South Asia	54.2	71.7	0.4	3.8	0.1	0.9	23.1	25.6	0.9	7.5	14.3	17.4
Sub-Saharan Africa	52.1	67.6	..	7.7	..	1.3	29.9	65.1	7.5	3.6	22.5	..
High income	78.9	*79.4*	2.9	*3.9*	0.7	1.1	81.1	125.4	..	..	26.2	*32.1*
Europe EMU	..	..	1.9	*3.6*	0.5	0.8	79.1	86.3	..	..	..	*41.7*

a. Data prior to 1993 refer to the former Socialist Federal Republic of Yugoslavia.

Credit, investment, and expenditure 5.1

About the data

The indicators in the table measure the relative size of states and markets in national economies. There is no ideal size for states, and size alone does not capture their full effect on markets. Large states may support prosperous and effective markets; small states may be hostile toward markets. The resources of a large state may be used to correct genuine market failures—or merely to subsidize state enterprises making goods or providing services that the private sector might have produced more efficiently. A large share of private domestic investment in total investment may reflect a highly competitive and efficient private sector—or one that is subsidized and protected.

Because data on subnational units of government—state, provincial, and municipal—are not readily available, the size of the public sector is measured here by the size of the central government. While the central government is usually the largest economic agent in a country and typically accounts for most public sector revenues, expenditures, and deficits, in some countries—especially large ones—state, provincial, and local governments are important participants in the economy. In addition, activities attributed to the "central government" may vary depending on the accounting practice followed. In most countries central government finance data are consolidated into one overall account, but in others only budgetary central government accounts are available, which often omit the operations of state-owned enterprises (see *Primary data documentation*).

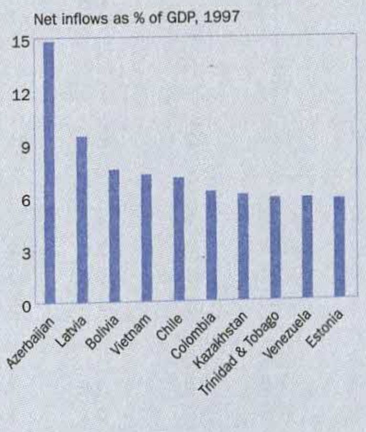
When direct estimates are not available, private gross domestic fixed investment is estimated as the difference between total gross domestic investment and consolidated public investment. Total investment may be estimated directly from surveys of enterprises and administrative records or indirectly using the commodity flow method. Consolidated measures of public investment may omit important subnational units of government. In addition, public investment data may include financial as well as physical capital investment. As the difference between two estimated quantities, private investment may be undervalued or overvalued and subject to large errors over time. (See *About the data* for table 4.9 for further discussion on measuring domestic investment.)

Statistics on foreign direct investment are based on balance of payments data reported by the International Monetary Fund (IMF), supplemented by data on net foreign direct investment reported by the Organisation for Economic Co-operation and Development and official national sources. The data suffer from deficiencies relating to definitions, coverage, and cross-country comparability. (See *About the data* for table 6.7 for a detailed discussion of data on foreign direct investment.)

Data on domestic credit to the private sector are taken from the banking survey of the IMF's *International Financial Statistics* or, when the broader aggregate is not available, from its monetary survey. The monetary survey includes monetary authorities (the central bank) and deposit money banks. In addition to these, the banking survey includes other banking institutions, such as savings and loan institutions, finance companies, and development banks. In some cases credit to the private sector may include credit to state-owned or partially state-owned enterprises.

Figure 5.1

Several transition economies rank high in foreign direct investment



Source: Table 5.1.

The figure shows the top 10 developing country recipients of net foreign direct investment (FDI). FDI is the largest source of capital flows to developing countries. Preliminary data for 1998 suggest that low asset prices and strong efforts to attract FDI may have increased inflows to East Asia compared with 1997.

Definitions

- **Private investment** covers gross outlays by the private sector (including private nonprofit agencies) on additions to its fixed domestic assets. Gross domestic fixed investment includes similar outlays by the public sector. No allowance is made for the depreciation of assets. • **Foreign direct investment** is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. Gross domestic investment (used in the denominator) is gross domestic fixed investment plus net changes in stocks. • **Credit to private sector** refers to financial resources provided to the private sector—such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable—that establish a claim for repayment. For some countries these claims include credit to public enterprises.
- **Private nonguaranteed debt** consists of external obligations of private debtors that are not guaranteed for repayment by a public entity. Total external debt is the sum of public and publicly guaranteed long-term debt, private nonguaranteed long-term debt, IMF credit, and short-term debt. • **Central government expenditure** comprises the expenditures of all government offices, departments, establishments, and other bodies that are agencies or instruments of the central authority of a country. It includes both current and capital (development) expenditures.

Data sources

Private investment data are World Bank estimates. Data on foreign direct investment are based on estimates compiled by the IMF in the *Balance of Payments Statistics Yearbook*, supplemented by World Bank staff estimates. Data on domestic credit are from the IMF's *International Financial Statistics*, and data on government expenditure are from the IMF's *Government Finance Statistics Yearbook*. External debt figures are from the World Bank's Debtor Reporting System as reported in *Global Development Finance 1999*.

5.2 Stock markets

	Market capitalization				Value traded		Turnover ratio		Listed domestic companies		IFC Investable index	
	$ millions		% of GDP		% of GDP		value of shares traded as % of capitalization				% change in price index	
	1990	1998	1990	1997	1990	1997	1990	1998	1990	1997	1997	1998
Albania	..	..	..	..	..	..	..	..	..	..	..	..
Algeria	..	..	..	..	..	..	..	..	..	..	..	..
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	3,268	45,332	2.3	18.2	0.6	*7.9*	33.6	28.8	179	136	17.4	–28.5
Armenia	..	*16*	..	1.0	..	*0.1*	..	*0.8*	..	59	..	..
Australia	107,611	*696,656*	36.2	177.0	13.2	*79.0*	31.6	*52.2*	1,089	1,219	..	..
Austria	11,476	*35,724*	7.2	17.3	11.7	*11.9*	110.3	*61.8*	97	101	..	..
Azerbaijan	..	..	..	..	..	..	..	..	..	..	..	..
Bangladesh	321	1,034	1.1	3.7	0.0	*0.9*	1.5	*24.2*	134	202	–67.7 [a]	–38.5 [a]
Belarus	..	..	..	..	..	..	..	..	..	..	..	..
Belgium	65,449	*136,965*	33.4	56.5	3.3	*12.3*	..	..	182	138	..	..
Benin	..	..	..	..	..	..	..	..	..	..	..	..
Bolivia	..	*344*	..	4.3	..	*0.0*	..	*0.6*	..	11	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	*261*	724	*6.6*	12.1	*0.2*	*1.5*	*6.1*	*9.0*	9	12	99.8 [a]	9.2 [a]
Brazil	16,354	160,887	3.5	31.1	1.2	*24.8*	23.6	70.9	581	536	21.8	–43.0
Bulgaria	..	992	..	0.0	..	*0.0*	..	*0.1*	..	15	–70.5 [a]	–30.1 [a]
Burkina Faso	..	..	..	..	..	..	..	..	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	..	..	..	..	..	..	..	..	..	..
Canada	241,920	*567,635*	42.2	93.4	12.4	*58.5*	26.7	*62.2*	1,144	1,362	..	..
Central African Republic	..	..	..	..	..	..	..	..	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	13,645	51,866	45.0	93.5	2.6	*9.7*	6.3	7.3	215	295	3.6	–29.8
China	*2,028*	231,322	*0.5*	22.9	*0.2*	*41.0*	*158.9*	130.1	*14*	764	–25.0	–52.6
Hong Kong, China	83,397	*413,323*	111.5	241.1	46.3	*285.5*	43.1	*44.2*	284	658	..	..
Colombia	1,416	13,357	3.5	20.4	0.2	*2.0*	5.6	9.6	80	189	30.4	–46.8
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Congo, Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Costa Rica	*475*	*820*	*7.0*	8.6	*0.2*	*0.2*	*5.8*	*3.5*	*82*	114	..	..
Côte d'Ivoire	549	1,818	5.1	12.0	0.2	*0.2*	3.4	*2.2*	23	35	–10.6 [a]	4.4 [a]
Croatia	..	3,190	..	3.2	..	0.3	..	*0.0*	*1*	77	..	–33.8 [a]
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	12,045	..	24.6	..	*13.6*	..	38.0	..	276	–22.0	–7.3
Denmark	39,063	*93,766*	29.3	55.1	8.3	*27.6*	28.0	*54.2*	258	237	..	..
Dominican Republic	..	*140*	..	0.9	..	*0.0*	..	..	..	6	..	..
Ecuador	*69*	1,527	*0.5*	10.9	..	*0.9*	*0.0*	*5.2*	*65*	41	–8.7 [a]	–36.9 [a]
Egypt, Arab Rep.	1,765	24,381	4.1	27.6	0.3	*7.7*	..	22.3	573	650	..	–30.9
El Salvador	..	*499*	..	4.4	..	*0.1*	..	..	..	59	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	519	..	21.5	..	*31.7*	..	..	..	22	..	–65.4 [a]
Ethiopia	..	..	..	..	..	..	..	..	..	..	..	..
Finland	22,721	*73,322*	16.9	61.2	2.9	*30.3*	..	..	73	124	..	..
France	314,384	*674,368*	26.3	48.4	9.8	*29.1*	..	..	578	683	..	..
Gabon	..	..	..	..	..	..	..	..	..	..	..	..
Gambia, The	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..
Germany	355,073	*825,233*	*22.9*	39.4	*22.1*	*49.2*	139.3	*123.2*	413	700	..	..
Ghana	*76*	1,384	*1.2*	16.4	*0.0*	*0.7*	*0.0*	*1.1*	*13*	21	–32.4 [a]	17.3 [a]
Greece	15,228	79,992	18.4	*19.7*	4.7	*6.7*	36.3	86.5	145	230	33.7	91.2
Guatemala	..	*139*	..	0.8	..	*0.0*	..	2.5	..	7	..	..
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	..	..	..	..	..	..	..	..	..	..	..	..
Honduras	*40*	..	*1.3*	*8.5*	*0.0*	*0.0*	0.0	*0.0*	*26*	119	..	..

Stock markets 5.2

	Market capitalization				Value traded		Turnover ratio		Listed domestic companies		IFC Investable index	
	$ millions		% of GDP		% of GDP		value of shares traded as % of capitalization				% change in price index	
	1990	1998	1990	1997	1990	1997	1990	1998	1990	1997	1997	1998
Hungary	*505*	14,028	*1.5*	32.8	*0.3*	*16.8*	*6.3*	113.9	*21*	49	60.0	–10.8
India	38,567	105,188	12.9	33.7	7.3	*14.1*	65.9	56.0	6,200	5,843	5.8	–23.0
Indonesia	8,081	21,224	7.1	13.5	3.5	*19.4*	75.8	60.7	125	282	–73.6	–28.1
Iran, Islamic Rep.	34,282	*15,123*	..	*7.3*	..	0.8	*30.4*	*22.2*	*97*	263	..	..
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	*24,135*	..	32.2	..	*20.2*	..	*24.5*	..	83	..	..
Israel	3,324	39,628	6.3	46.2	10.5	*10.9*	95.8	*26.4*	216	640	21.7	–16.0
Italy	148,766	*344,665*	13.6	30.1	3.9	*17.3*	26.8	*43.8*	220	235	..	..
Jamaica	911	2,139	21.5	53.4	0.8	*1.8*	3.4	*2.5*	44	49	7.2[a]	–21.3[a]
Japan	2,917,679	*2,216,699*	98.2	52.9	54.0	*29.9*	43.8	*37.1*	2,071	2,387	13.4[b]	4.6[b]
Jordan	2,001	5,838	49.8	77.6	10.1	*7.1*	20.0	11.6	105	139	12.6	3.0
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..
Kenya	453	2,024	5.3	17.7	0.1	*1.0*	2.2	*3.7*	54	58	–11.0[a]	13.8[a]
Korea, Dem. Rep.	110,594	*41,881*	..	..	..	..	..	..	669	776	..	..
Korea, Rep.	..	114,593	..	..	..	..	61.3	184.7	..	..	–68.9	120.7
Kuwait	..	*25,880*	..	85.2	..	*113.8*	..	..	..	74	..	..
Kyrgyz Republic	..	*5*	..	*0.3*	..	*0.0*	..	*3.7*	..	*27*	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	..	382	..	6.1	..	*1.5*	..	*14.6*	..	50	..	–67.4[a]
Lebanon	..	*2,904*	..	19.4	..	*4.3*	..	..	..	9	..	..
Lesotho	..	..	..	..	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	..	1,074	..	17.8	..	*2.5*	..	*8.9*	..	607	8.7[a]	–39.2[a]
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	..	..	..	..	..	..	..	..	..	..	..	..
Malawi	..	..	..	..	..	..	..	..	..	..	..	..
Malaysia	48,611	107,104	113.6	95.1	25.4	*149.3*	24.6	29.3	282	708	–72.9	–2.9
Mali	..	..	..	..	..	..	..	..	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	268	1,849	10.1	37.8	0.2	*3.1*	*1.9*	*5.4*	13	40	5.3[a]	1.4[a]
Mexico	32,725	91,746	12.4	38.9	4.6	*13.1*	44.0	28.5	199	198	48.8	–38.9
Moldova	..	..	..	..	..	..	..	..	..	..	..	..
Mongolia	..	*54*	..	6.3	..	*1.7*	..	..	..	434	..	..
Morocco	966	15,676	3.7	36.3	0.2	*3.1*	..	10.1	71	49	..	28.7
Mozambique	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	..	..	..	..	..	..	..	..	..	..	..	..
Namibia	*21*	*689*	*0.7*	21.0	*0.0*	*0.7*	*0.0*	*12.1*	*3*	13	..	..
Nepal	..	*200*	..	4.1	..	*0.1*	..	*2.3*	..	98	..	..
Netherlands	119,825	*468,736*	42.2	130.1	14.2	*79.1*	29.0	*92.4*	260	201	..	..
New Zealand	8,835	*90,483*	20.5	140.1	4.5	*38.2*	17.3	*28.1*	171	190	..	..
Nicaragua	..	..	..	..	..	..	..	..	..	..	..	..
Niger	..	..	..	..	..	..	..	..	..	..	..	..
Nigeria	1,372	2,887	4.8	9.1	0.0	*0.3*	0.9	5.2	131	182	–1.9[a]	–28.5[a]
Norway	26,130	*66,503*	22.6	43.4	12.1	*30.3*	54.4	*70.3*	112	196	..	..
Oman	*1,061*	*7,108*	*9.4*	*16.3*	*0.9*	1.7	12.3	*21.3*	55	114	..	..
Pakistan	2,850	5,418	7.1	17.8	0.6	*18.6*	8.7	114.3	487	781	26.9	–61.9
Panama	*226*	*2,175*	*3.4*	*15.5*	*0.0*	*0.3*	*0.9*	..	*13*	21	..	..
Papua New Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Paraguay	..	*389*	..	3.8	..	*0.2*	..	*11.3*	..	60	..	..
Peru	812	11,645	2.5	27.5	0.3	*6.3*	*19.3*	19.2	294	248	12.5	–39.3
Philippines	5,927	35,314	13.4	38.2	2.7	*24.1*	13.6	31.1	153	221	–61.6	9.2
Poland	*144*	20,461	*0.2*	8.9	*0.0*	*5.9*	*89.7*	54.3	*9*	143	–18.5	–12.3
Portugal	9,201	62,954	13.3	38.1	2.4	*20.5*	16.9	95.7	181	148	44.4	38.4
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	1,016	..	1.8	..	*0.8*	..	*7.2*	..	76	..	–67.7[a]
Russian Federation	*244*	20,598	*0.0*	28.7	..	*3.7*	..	0.0	*13*	208	..	–84.2

5.2 Stock markets

	Market capitalization				Value traded		Turnover ratio		Listed domestic companies		IFC Investable index	
	$ millions		% of GDP		% of GDP		value of shares traded as % of capitalization				% change in price index	
	1990	1998	1990	1997	1990	1997	1990	1998	1990	1997	1997	1998
Rwanda	..	..	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	*48,213*	42,563	*40.8*	42.3	*1.9*	*11.8*	..	26.9	*59*	70	..	–26.8[a]
Senegal	..	..	..	..	..	..	..	..	..	..	..	..
Sierra Leone	..	..	..	..	..	..	..	..	..	..	..	..
Singapore	34,308	*106,317*	91.6	110.4	54.2	*66.4*	..	*28.7*	150	303	..	..
Slovak Republic	..	965	..	9.4	..	*11.1*	..	73.7	..	872	..	–56.0
Slovenia	..	2,450	..	8.9	..	*1.9*	..	*68.8*	*24*	26	9.2[a]	19.0[a]
South Africa	137,540	170,252	128.9	179.8	7.6	*34.8*	..	30.4	732	642	–13.8	–30.3
Spain	111,404	*290,383*	22.6	54.6	8.3	*85.1*	..	..	427	384	..	..
Sri Lanka	917	1,705	11.4	13.9	0.5	*2.1*	5.8	14.8	175	239	22.3	–29.2
Sudan	..	..	..	..	..	..	..	..	..	..	..	..
Sweden	97,929	*272,730*	42.6	119.8	7.6	*77.4*	14.9	*64.4*	258	245	..	..
Switzerland	160,044	*575,338*	70.1	225.4	*29.6*	*193.9*	0.0	*94.0*	182	216	..	..
Syrian Arab Republic	..	..	..	..	..	..	..	..	..	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	..	..	..	..	..	..	..	..	..	..	..	..
Thailand	23,896	34,903	28.0	15.3	26.8	*15.0*	92.6	71.2	214	431	–78.8	34.3
Togo	..	..	..	..	..	..	..	..	..	..	..	..
Trinidad and Tobago	696	3,922	13.7	52.9	1.1	*2.3*	10.0	*8.3*	30	24	109.3[a]	17.5[a]
Tunisia	533	2,268	4.3	12.2	0.2	*1.5*	3.3	*6.8*	13	34	–47.0[a]	–6.4[a]
Turkey	19,065	33,646	12.7	32.2	3.9	*31.1*	42.5	154.9	110	257	109.9	–53.1
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	..	..	..	..	..	..	..	..	..	..	..	..
Ukraine	..	570	..	7.4	..	..	..	..	..	..	..	–82.3[a]
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	848,866	*1,996,225*	87.0	155.2	28.6	*64.4*	33.3	*36.8*	1,701	2,046	23.0[c]	15.8[c]
United States	3,059,434	*11,308,779*	55.1	144.4	31.5	*130.4*	53.4	*92.8*	6,599	8,851	20.3[d]	26.7[d]
Uruguay	..	*212*	..	1.1	..	*0.0*	0.0	*1.7*	36	16	..	..
Uzbekistan	..	*465*	..	1.9	..	*0.1*	..	..	..	*4*	..	..
Venezuela	8,361	7,587	17.2	16.7	4.6	*4.4*	43.0	14.2	76	91	25.7	–50.5
Vietnam	..	..	..	..	..	..	..	..	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	..	*705*	..	18.2	..	*0.2*	..	*1.0*	..	6	..	..
Zimbabwe	2,395	1,310	27.3	22.1	0.6	*6.0*	2.9	9.2	57	64	–46.8	–58.1
World	9,398,391 s	*23,540,720* s	51.8 w	84.6 w	29.0 w	*69.9* w	47.5 w	.. w	29,189 s	40,394 s		
Low income	46,507	*151,713*	10.9	26.5	5.2	*11.5*	47.1	56.1	7,086	7,902		
Middle income	438,651	*1,639,972*	*19.4*	31.8	*5.1*	*22.1*	..	44.2	5,039	10,239		
Lower middle income	157,836	*572,133*	5.2	21.9	..	*21.2*	..	*117.4*	2,517	5,634		
Upper middle income	280,815	*1,067,839*	22.3	40.9	3.7	*22.8*	31.9	48.3	2,522	4,605		
Low & middle income	485,158	*1,791,685*	*18.9*	31.3	*5.3*	*20.9*	..	46.3	12,125	18,141		
East Asia & Pacific	197,109	*426,006*	*16.3*	26.4	*6.6*	*41.3*	*118.2*	*164.1*	1,443	3,624		
Europe & Central Asia	19,065	*243,096*	*2.1*	23.2	..	*10.4*	..	*54.9*	110	2,711		
Latin America & Carib.	78,470	*608,395*	7.6	30.3	2.1	*15.0*	29.6	45.2	1,748	2,238		
Middle East & N. Africa	5,265	*125,286*	*27.8*	35.5	*1.5*	*8.6*	..	..	817	1,328		
South Asia	42,655	*143,250*	11.3	28.4	5.9	*13.1*	53.4	56.1	6,996	7,163		
Sub-Saharan Africa	142,594	*245,652*	*54.8*	110.1	*4.0*	*20.8*	..	*8.0*	1,011	1,077		
High income	8,913,233	*21,749,035*	56.4	97.8	32.4	*81.9*	48.7	*74.9*	17,064	22,253		
Europe EMU	1,168,755	*2,994,299*	22.4	46.5	7.5	*39.8*	..	..	2,485	2,853		

a. Data refer to the IFC Global index. b. Data refer to the Nikkei index. c. Data refer to the FT 100 index. d. Data refer to the S&P 500 index.

Stock markets 5.2

About the data

Financial market development is closely related to an economy's overall development. At low levels of economic development, commercial banks tend to dominate the financial system. As economies grow, specialized financial intermediaries and equity markets develop.

The stock market indicators presented in the table include measures of size (market capitalization and number of listed domestic companies) and liquidity (value traded as a percentage of GDP, and turnover ratio). The comparability of such indicators between countries may be limited by conceptual and statistical weaknesses such as inaccurate reporting and differences in accounting standards. The percentage change in stock market prices in U.S. dollars, from the International Finance Corporation's Global (IFCG) and Investable (IFCI) country indexes, are important measures of overall performance. Regulatory and institutional factors that can boost investor confidence, such as the existence of a securities and exchange commission and the quality of investor protection laws, may influence the functioning of stock markets but are not included in this table.

Stock market size can be measured in a number of ways, each of which may produce a different ranking among countries. Market capitalization shows the overall size of the stock market in U.S. dollars and as a percentage of GDP. The number of listed domestic companies is another measure of market size. Market size is positively correlated with the ability to mobilize capital and diversify risk.

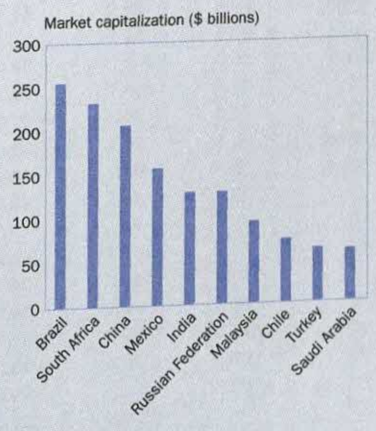
Market liquidity, the ability to easily buy and sell securities, is measured by dividing the total value traded by GDP. This indicator complements the market capitalization ratio by showing whether market size is matched by trading. The turnover ratio—the value of shares traded as a percentage of market capitalization—is also a measure of liquidity as well as of transactions costs. (High turnover indicates low transactions costs.) The turnover ratio complements the ratio of value traded to GDP, because turnover is related to the size of the market and the value traded ratio to the size of the economy. A small, liquid market will have a high turnover ratio but a small value traded ratio. Liquidity is an important attribute of stock market development because, in theory, liquid markets improve the allocation of capital and enhance prospects for long-term economic growth. A more comprehensive measure of liquidity would include trading costs and the time and uncertainty in finding a counterpart in settling trades.

The International Finance Corporation (IFC) has developed a series of indexes for investors interested in investing in stock markets in developing countries. The IFCG indexes are at the core of the IFC family of emerging market indexes. The IFCG indexes are intended to represent the most active stocks in the stock markets they cover and to be the broadest possible indicator of market movements. The IFCI indexes apply the same calculation methodology as the IFCG indexes, but include only a subset of IFCG markets that IFC has determined to be "investable." The indexes are designed to measure returns on emerging market stocks that are legally and practically open to foreign portfolio investment. The indexes are widely used benchmarks for international portfolio management. The IFCG indexes cover 51 markets, providing regular updates on more than 2,200 stocks, and the IFCI indexes more than 1,250 stocks. See IFC's booklet *The IFC Indexes: Methodology, Definitions, and Practices* for further information on the IFCG and IFCI indexes.

Because markets included in IFC's emerging markets category vary widely in level of development, it is best to look at the entire category to identify the most significant market trends. And it is useful to remember that stock market trends may be distorted by currency conversions, especially when a currency has registered a significant devaluation.

Figure 5.2

The top 10 emerging stock markets in 1997



Source: IFC 1998.

The market capitalization of emerging markets accounted for 9 percent of the world's total market capitalization in 1997.

Definitions

- **Market capitalization** (also known as market value) is the share price times the number of shares outstanding. • **Value traded** refers to the total value of shares traded during the period. • **Turnover ratio** is the total value of shares traded during the period divided by the average market capitalization for the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period. • **Listed domestic companies** are the number of domestically incorporated companies listed on the country's stock exchanges at the end of the year. This indicator does not include investment companies, mutual funds, or other collective investment vehicles. • **IFC Investable index price change** is the U.S. dollar price change in the stock markets covered by the IFCI country index, supplemented by the IFCG country index.

Data sources

Data are from IFC's *Emerging Stock Markets Factbook 1998*, with supplemental data from IFC. IFC collects data through an annual survey of the world's stock exchanges, supplemented by information provided by Reuters and IFC's network of correspondents. GDP data are from the World Bank's national accounts data files. *About the data* is based on Demirgüç-Kunt and Levine (1996b).

5.3 Portfolio investment regulation and risk

	Entry and exit regulations			Composite ICRG risk rating[a]	Institutional Investor credit rating[a]	Euromoney country creditworthiness rating[a]	Moody's sovereign long-term debt rating[a]		Standard & Poor's sovereign long-term debt rating[a]	
	Entry 1997	Repatriation of income 1997	Repatriation of capital 1997	December 1998	September 1998	September 1998	Foreign currency December 1998	Domestic currency December 1998	Foreign currency December 1998	Domestic currency December 1998
Albania	..	..	..	57.0	12.0	13.8	..	..	..	..
Algeria	..	..	..	56.5	25.8	26.3	..	..	..	..
Angola	..	..	..	49.8	12.3	14.3	..	..	..	..
Argentina	Free	Free	Free	74.5	41.8	45.0	Ba3	Ba3	BB	BBB–
Armenia	..	..	..	57.5	..	15.9	..	..	..	..
Australia	..	..	..	78.3	74.1	90.9	Aa2	Aaa	AA	AAA
Austria	..	..	..	85.3	88.8	96.8	Aaa	Aaa	AAA	AAA
Azerbaijan	..	..	..	59.0	..	17.5	..	..	..	..
Bangladesh	Free	Free	Free	62.3	26.1	23.4	..	..	..	..
Belarus	..	..	..	61.0	14.6	11.7	..	..	..	..
Belgium	..	..	..	81.3	83.5	94.3	Aa1	Aa1	AA+	AA+
Benin	..	..	..	..	16.5	8.4	..	..	..	..
Bolivia	..	..	..	66.5	27.0	35.2	B1	B1	BB–	BB+
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	Free	Free	Free	81.0	51.9	40.2	..	..	..	..
Brazil	Free	Free	Free	65.3	38.1	35.9	B2	Caa1	BB–	BB+
Bulgaria	..	..	..	76.3	26.3	26.5	B2	..	B	B
Burkina Faso	..	..	..	60.8	20.0	20.5	..	..	..	..
Burundi	..	..	..	..	..	..	..	..	..	..
Cambodia	..	..	..	..	..	5.4	..	..	..	..
Cameroon	..	..	..	63.5	18.5	22.5	..	..	..	..
Canada	..	..	..	83.0	84.5	93.0	Aa2	Aa1	AA+	AAA
Central African Republic	..	..	..	..	..	5.8	..	..	..	..
Chad	..	..	..	..	..	6.2	..	..	..	..
Chile	Rel. free	Free	Delayed [b]	74.8	62.0	59.8	..	..	A	AA
China	Special	Free	Free	75.5	57.7	48.0	A3	..	BBB+	..
Hong Kong, China	..	..	..	74.8	61.4	75.8	..	A1	A+	AA–
Colombia	Auth. only	Free	Free	55.0	46.2	46.2	Baa3	Baa2	BBB–	A
Congo, Dem. Rep.	..	..	..	30.8	..	8.6	..	..	..	..
Congo, Rep.	..	..	..	43.8	11.1	16.0	..	..	..	..
Costa Rica	Free	Free	Free	76.0	36.4	39.8	Ba1	Ba1	BB	BB+
Côte d'Ivoire	Free	Free	Free	65.8	22.2	30.3	..	..	..	..
Croatia	Free	Free	Free	70.8	38.0	43.9	Baa3	..	BBB–	BBB+
Cuba	..	..	..	60.8	12.5	17.3	..	..	..	..
Czech Republic	Free	Free	Free	76.8	..	52.3	..	A1	A–	AA–
Denmark	..	..	..	86.3	84.7	89.7	Aa1	Aaa	AA+	AAA
Dominican Republic	..	..	..	72.3	26.4	22.0	..	B1	B+	BB
Ecuador	Free	Free	Free	60.8	26.1	28.4	B3	B3	..	..
Egypt, Arab Rep.	Free	Free	Free	70.8	43.2	43.1	..	..	BBB–	A–
El Salvador	..	..	..	75.4	28.7	36.7	..	Baa2	BB	BBB+
Eritrea	..	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	73.0	40.8	41.2	..	..	BBB+	A–
Ethiopia	..	..	..	59.3	16.6	24.7	..	..	..	..
Finland	..	..	..	87.3	81.1	94.5	Aaa	Aaa	AA	AA
France	..	..	..	82.0	90.4	95.9	Aaa	Aaa	AAA	AAA
Gabon	..	..	..	69.0	23.6	28.3	..	..	..	..
Gambia, The	..	..	..	69.5	..	9.2	..	..	..	..
Georgia	..	..	..	..	10.9	27.2	..	..	..	..
Germany	..	..	..	83.8	92.9	97.1	..	Aaa	AAA	AAA
Ghana	Free	Free	Free	62.5	30.3	29.4	..	..	..	..
Greece	Free	Free	Free	79.3	54.6	79.6	Baa1	A2	..	..
Guatemala	..	..	..	67.5	26.6	33.0	Ba2	Ba1	..	..
Guinea	..	..	..	61.8	16.2	18.5	..	..	..	..
Guinea-Bissau	..	..	..	47.0	..	14.8	..	..	..	..
Haiti	..	..	..	55.3	11.9	9.6	..	..	..	..
Honduras	..	..	..	60.3	20.1	28.5	..	B2	..	..

Portfolio investment regulation and risk 5.3

	Entry and exit regulations			Composite ICRG risk rating[a]	Institutional Investor credit rating[a]	Euromoney country credit-worthiness rating[a]	Moody's sovereign long-term debt rating[a]		Standard & Poor's sovereign long-term debt rating[a]	
							Foreign currency	Domestic currency	Foreign currency	Domestic currency
	Entry 1997	Repatriation of income 1997	Repatriation of capital 1997	December 1998	September 1998	September 1998	December 1998	December 1998	December 1998	December 1998
Hungary	Free	Free	Free	78.0	54.1	55.0	..	A1	BBB	A
India	Auth. only	Free	Free	64.8	44.9	39.0	..	Ba2	BB	BBB
Indonesia	Rel. free	Restricted	Restricted	41.0	32.9	27.2	B3	B3	AA+	B–
Iran, Islamic Rep.	..	..	..	69.5	29.3	23.4	..	..	..	..
Iraq	..	..	..	45.8	7.0	6.8	..	..	..	..
Ireland	..	..	..	88.3	80.4	94.9	Aaa	Aaa	AA	AAA
Israel	..	..	..	65.8	53.1	76.1	Aaa	..	A–	AA–
Italy	..	..	..	81.0	79.0	91.1	Aa3	Aa3	AA	AA
Jamaica	Rel. free	Free	Free	72.0	29.1	42.6	Ba3	Baa3	..	..
Japan	..	..	..	83.3	88.3	88.0	Aa1	Aa1	AAA	AAA
Jordan	Free	Free	Free	75.5	36.8	40.3	Ba3	..	BB–	BBB–
Kazakhstan	..	..	..	70.3	27.7	27.5	Ba3	..	B+	BB–
Kenya	Rel. free	Free	Free	61.5	25.9	24.6	..	..	..	..
Korea, Dem. Rep.	..	..	..	40.0	5.9	27.4	..	..	..	..
Korea, Rep.	Rel. free	Free	Free	70.0	53.6	64.5	Ba1	..	BB+	BBB+
Kuwait	..	..	..	78.3	57.4	77.7	..	..	A	A+
Kyrgyz Republic	..	..	..	..	..	23.7	..	..	..	..
Lao PDR	..	..	..	..	..	..	..	..	..	..
Latvia	..	..	..	71.0	36.3	37.8	..	..	BBB	A–
Lebanon	..	..	..	56.3	31.8	34.1	B1	..	BB–	BB
Lesotho	..	..	..	..	..	13.8	..	..	..	..
Libya	..	..	..	64.3	28.6	21.6	..	..	..	..
Lithuania	Rel. free	Free	Free	74.0	..	36.6	Ba1	..	BBB–	BBB+
Macedonia, FYR	..	..	..	..	..	15.4	..	..	..	..
Madagascar	..	..	..	65.5	..	20.2	..	..	..	..
Malawi	..	..	..	62.8	19.8	18.1	..	..	..	..
Malaysia	Free	Free	Free	67.8	59.0	41.9	Baa3	A3	BBB–	A
Mali	..	..	..	66.0	17.0	24.9	..	..	..	..
Mauritania	..	..	..	..	..	9.2	..	..	..	..
Mauritius	..	..	..	..	53.0	28.7	Baa2	..	..	..
Mexico	Free	Free	Free	67.5	45.4	45.4	Ba2	Baa3	BB	BBB+
Moldova	..	..	..	57.8	..	17.3	B2	..	..	..
Mongolia	..	..	..	65.5	..	19.6	..	..	..	..
Morocco	..	..	..	72.5	42.4	41.0	..	..	BB	BBB
Mozambique	..	..	..	58.3	17.9	20.5	..	..	..	..
Myanmar	..	..	..	55.0	20.7	17.4	..	..	..	..
Namibia	Free	Free	Free	77.8	..	36.3	..	..	..	..
Nepal	..	..	..	..	24.6	13.7	..	..	..	..
Netherlands	..	..	..	88.5	91.9	96.9	..	Aaa	AAA	AAA
New Zealand	..	..	..	76.5	73.7	91.3	Aa2	Aaa	AA+	AAA
Nicaragua	..	..	..	47.3	12.4	23.9	..	B2	..	..
Niger	..	..	..	55.3	..	10.9	..	..	..	..
Nigeria	..	..	..	59.5	16.4	17.2	..	..	..	..
Norway	..	..	..	89.5	88.2	95.8	Aaa	Aaa	AAA	AAA
Oman	Free	Free	Free	75.0	53.4	61.5	..	..	BBB–	..
Pakistan	Free	Free	Free	53.8	25.3	18.6	Caa1	..	CC	..
Panama	Free	Free	Free	73.5	38.1	49.7	Ba1	..	BB+	BB+
Papua New Guinea	..	..	..	67.8	31.0	29.0	..	..	..	..
Paraguay	..	..	..	64.0	32.7	31.1	..	B1	BB–	BBB–
Peru	Free	Free	Free	66.3	34.6	40.1	..	Baa3	BB	BBB–
Philippines	Special	Free	Free	69.0	43.0	40.3	Ba1	Baa3	BB+	BBB+
Poland	Free	Free	Free	82.0	54.0	52.1	Baa3	A2	BBB–	A–
Portugal	Free	Free	Free	84.5	75.5	90.7	Aa2	Aa2	AA	AA
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	..	..	..	60.3	33.8	..	B3	..	B–	B+
Russian Federation	..	..	..	49.0	30.2	17.7	B3	Ca	CCC–	..

5.3 Portfolio investment regulation and risk

	Entry and exit regulations			Composite ICRG risk rating[a]	Institutional Investor credit rating[a]	Euromoney country creditworthiness rating[a]	Moody's sovereign long-term debt rating[a]		Standard & Poor's sovereign long-term debt rating[a]	
	Entry 1997	Repatriation of income 1997	Repatriation of capital 1997	December 1998	September 1998	September 1998	Foreign currency December 1998	Domestic currency December 1998	Foreign currency December 1998	Domestic currency December 1998
Rwanda	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	..	..	..	73.0	55.7	63.7	..	..	..	..
Senegal	..	..	..	63.3	22.3	25.5	..	..	..	..
Sierra Leone	..	..	..	31.0	6.7	11.3	..	..	..	..
Singapore	..	..	..	89.3	82.3	89.2	..	Aaa	AAA	AAA
Slovak Republic	..	..	..	78.0	41.7	39.0	Ba1	Baa2	BB+	BBB+
Slovenia	Closed	Restricted	Restricted	80.0	55.9	55.4	A3	..	A	AA
South Africa	Free	Free	Free	68.0	46.6	42.0	Baa3	Baa1	BB+	BBB+
Spain	..	..	..	79.8	80.0	92.0	Aa2	Aa2	AA	AA
Sri Lanka	Rel. free	Restricted	Restricted	63.3	32.5	27.5	..	..	..	..
Sudan	..	..	..	43.3	7.2	7.1	..	..	..	..
Sweden	..	..	..	83.5	79.1	93.4	Aa2	Aa1	AA+	AAA
Switzerland	..	..	..	87.0	93.4	96.4	..	Aaa	AAA	AAA
Syrian Arab Republic	..	..	..	70.5	24.5	24.4	..	..	..	..
Tajikistan	..	..	..	..	..	17.8	..	..	..	..
Tanzania	..	..	..	60.8	19.9	21.0	..	..	..	..
Thailand	Rel. free	Free	Free	69.3	47.5	41.2	Ba1	Baa1	BBB–	A–
Togo	..	..	..	60.3	18.1	20.1	..	..	..	..
Trinidad and Tobago	Rel. free	Free	Free	76.8	42.9	47.0	Ba1	Baa3	BB+	BBB+
Tunisia	..	..	..	72.5	49.0	45.7	Baa3	..	BBB–	A
Turkey	Free	Free	Free	52.3	37.8	38.5	B1	..	B	..
Turkmenistan	..	..	..	..	..	9.5	..	..	..	..
Uganda	..	..	..	64.0	19.9	25.7	..	..	..	..
Ukraine	..	..	..	61.5	19.8	17.1	B3	..	..	..
United Arab Emirates	..	..	..	78.3	61.8	79.4	..	..	..	..
United Kingdom	..	..	..	83.5	90.9	95.0	Aaa	Aaa	AAA	AAA
United States	..	..	..	83.5	91.2	97.8	..	Aaa	AAA	AAA
Uruguay	..	..	..	72.8	45.2	46.3	Baa3	Baa3	BBB–	BBB+
Uzbekistan	..	..	..	..	..	19.5	..	..	..	..
Venezuela	Rel. free	Restricted	Restricted	62.3	36.1	30.0	B2	Caa1	B+	..
Vietnam	..	..	..	58.5	30.2	27.5	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	67.0	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	38.8	..	13.9	..	..	..	..
Zambia	Free	Free	Free	59.0	17.2	21.1	..	..	..	..
Zimbabwe	Rel. free	Free	Free	51.0	29.8	26.2	..	..	..	..
World				67.7 m	35.3 m	29.0 m				
Low income				59.2	18.3	17.6				
Middle income				69.5	36.3	36.7				
Lower middle income				69.0	30.2	29.0				
Upper middle income				72.9	44.0	42.0				
Low & middle income				64.0	28.6	25.6				
East Asia & Pacific				66.7	32.9	27.5				
Europe & Central Asia				65.9	33.8	23.7				
Latin America & Carib.				67.0	33.7	36.3				
Middle East & N. Africa				70.5	34.3	37.2				
South Asia				62.8	25.7	21.0				
Sub-Saharan Africa				60.8	18.5	20.2				
High income				83.3	80.4	91.3				
Europe EMU				84.2	82.3	94.7				

Note: For explanations of the terms used to describe entry and exit regulations see *Definitions*. a. This copyrighted material is reprinted with permission from the following data providers: PRS Group, 6320 Fly Road, Suite 102, P.O. Box 248, East Syracuse, N.Y. 13057; Institutional Investor, Inc., 488 Madison Avenue, New York, N.Y. 10022; Euromoney Publications PLC, Nestor House, Playhouse Yard, London EC4V 5EX, U.K.; Moody's Investors Service, 99 Church Street, New York, N.Y. 10007; Standard and Poor's Rating Services, The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, N.Y. 10020. Prior written consent from the original data providers cited must be obtained for third-party use of these data. b. After one year.

Portfolio investment regulation and risk 5.3

About the data

As investment portfolios become increasingly global, investors and governments seeking to attract foreign investment must have a good understanding of country risk. Risk, by its nature, is perceived differently by different groups. This table presents information on country risk and creditworthiness from several major international rating services, and information on the regulation of entry to and exit from emerging stock markets reported by the International Finance Corporation (IFC).

Entry and exit restrictions on investments are one of the mechanisms by which countries attempt to reduce the risk to their economies associated with foreign investment. Yet such restrictions may increase the risk or uncertainty perceived by investors, increasing their reluctance to participate in regulated markets. Many countries close industries considered strategic to foreign or nonresident investors. Or national law or corporate policy may limit foreign investment in a company or in certain classes of stocks. The regulations summarized in the table refer to "new money" investment by foreign institutions; other regulations may apply to capital invested through debt conversion schemes or to capital from other sources. The regulations shown here are formal ones. But even formal regulations may have very different effects in different countries because of differences in the prevailing bureaucratic culture, the speed with which applications are processed, and the extent of red tape. The effect of entry and exit regulations may also be influenced by graft and corruption, which are impossible to quantify.

Most risk ratings are numerical or alphabetical indexes. For numerical ratings, a higher number means lower risk. For alphabetical ratings, a letter closer to the beginning of the alphabet means lower risk. Readers should refer to the data sources for more details on the rating processes of the rating agencies. Risk ratings may be highly subjective, reflecting external perceptions that do not always capture the actual situation in a country. But these subjective perceptions are the reality that policymakers face in the climate they create for foreign private inflows. Countries that are not rated by credit risk rating agencies typically do not attract registered flows of private capital. The risk ratings presented here are included for their analytic usefulness and are not endorsed by the World Bank.

The PRS Group's *International Country Risk Guide* (ICRG) collects information on 22 components of risk, groups it into three major categories (political, financial, and economic), and converts it into a single numerical risk assessment ranging from 0 to 100. Ratings below 50 are considered very high risk, and those above 80 very low risk. Ratings are updated every month.

Institutional Investor country credit ratings are based on information provided by leading international banks. Responses are weighted using a formula that gives more importance to responses from banks with greater worldwide exposure and more sophisticated country analysis systems. Countries are rated on a scale of 0 to 100, and ratings are updated every six months.

Euromoney country creditworthiness ratings are based on nine weighted categories (covering economic performance, political risk, debt, and access to financial and capital markets) that assess country risk. The ratings, also on a scale of 0 to 100, are based on polls of economists and political analysts supplemented by quantitative data such as debt ratios and access to capital markets.

Ratings of sovereign foreign and domestic currency debt by Moody's Investors Service are presented for obligations that extend longer than one year. These long-term ratings measure total expected credit loss over the life of the security; they are not intended to measure other risks in fixed income investment, such as market risk.

Standard & Poor's ratings of sovereign long-term foreign and domestic currency debt are based on current information furnished by the issuer or obtained by Standard & Poor's from other sources it considers reliable. The ratings reflect several risk factors, such as the likelihood of default and the capacity and willingness of the debtor to make timely payments of interest and repayments of principal in accordance with the terms of the obligation. The ratings measure the creditworthiness of the debtor and do not take into account exchange-related uncertainties for foreign currency debt.

Definitions

- **Regulations on entry to emerging stock markets** are evaluated using the following terms: *free* (no significant restrictions), *relatively free* (some registration procedures required to ensure repatriation rights), *special classes* (foreigners restricted to certain classes of stocks designated for foreign investors), *authorized investors only* (only approved foreign investors may buy stocks), and *closed* (closed or access severely restricted, as for nonresident nationals only). • **Regulations on repatriation of income** (dividends, interest, and realized capital gains) and **repatriation of capital from emerging markets** are evaluated as *free* (repatriation done routinely) or *restricted* (repatriation requires registration with or permission of a government agency that may restrict the timing of exchange release).
- **Composite International Country Risk Guide (ICRG) risk rating** is an overall index, ranging from 0 to 100, based on 22 components of risk. • **Institutional Investor credit rating** ranks, from 0 to 100, the chances of a country's default. • **Euromoney country creditworthiness rating** ranks, from 0 to 100, the riskiness of investing in an economy. • **Moody's sovereign foreign and domestic currency long-term debt rating** assesses the risk of lending to governments. Aaa bonds are judged to be of the best quality and C bonds of the lowest quality. Numerical modifiers 1–3 are applied to classifications from Aa to B, with 1 indicating that the obligation ranks at the high end of its rating category.
- **Standard & Poor's sovereign foreign and domestic currency long-term debt ratings** are categorized as investment grade (AAA through BBB) and speculative grade (BB through C). Ratings from AA to CCC may be modified by the addition of a plus (+) or minus (–) sign to show relative standing within the rating category.

Data sources

Data on emerging stock markets' entry and exit regulations are from IFC's *Emerging Stock Markets Factbook 1998.* Country risk and creditworthiness ratings are from several sources: the PRS Group's monthly *International Country Risk Guide;* the monthly *Institutional Investor;* the monthly *Euromoney;* Moody's Investors Service's *Sovereign, Subnational and Sovereign-Guaranteed Issuers;* and Standard & Poor's Sovereign List in *Credit Week.*

5.4 Financial depth and efficiency

	Domestic credit provided by banking sector		Liquid liabilities		Quasi-liquid liabilities		Ratio of bank liquid reserves to bank assets		Interest rate spread		Spread over LIBOR	
	% of GDP		% of GDP		% of GDP		%		Lending minus deposit rate percentage points		Lending rate minus LIBOR percentage points	
	1990	1997	1990	1997	1990	1997	1990	1997	1990	1997	1990	1997
Albania	..	53.2	..	58.8	..	31.7	..	*6.7*	*2.1*	*7.2*	*16.7*	*18.4*
Algeria	74.7	42.9	73.6	39.8	24.9	15.0	1.3	2.0	..	..	..	..
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	32.4	27.2	11.5	23.9	7.1	17.3	7.4	2.6	..	2.3	..	3.5
Armenia	*62.3*	8.2	*83.5*	8.9	*42.9*	3.3	*13.6*	18.0	..	28.2	..	48.5
Australia	103.5	87.5	63.1	67.1	50.8	46.7	1.5	1.8	4.5	4.2	9.9	3.5
Austria	123.0	132.0	88.8	89.8	75.2	73.1	2.1	2.3	..	..	..	..
Azerbaijan	*57.2*	11.1	*33.5*	11.8	*11.6*	3.5	*4.5*	11.3	..	..	..	*156.5*
Bangladesh	24.1	31.9	23.6	30.3	17.0	21.7	12.8	8.2	4.0	5.9	7.7	8.2
Belarus	..	17.7	..	16.5	..	6.8	..	17.9	..	16.2	..	26.0
Belgium	73.6	147.0	47.9	85.6	29.0	68.2	0.2	1.0	6.9	4.2	4.7	1.3
Benin	22.4	7.5	26.7	23.4	5.9	8.0	29.3	12.1	9.0	..	7.7	..
Bolivia	30.7	55.5	24.5	47.3	18.0	33.7	18.8	10.1	18.0	35.3	33.5	44.3
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	–49.7	–75.2	23.6	22.8	14.7	17.0	11.0	10.0	1.8	4.8	–0.4	8.3
Brazil	89.8	43.1	26.4	30.1	18.5	24.2	6.7	11.0	..	..	..	..
Bulgaria	*118.5*	30.0	*71.9*	33.6	*53.6*	20.2	*10.2*	9.2	*8.9*	37.1	*42.4*	78.2
Burkina Faso	13.7	13.4	21.3	25.2	7.5	6.0	12.7	5.4	9.0	..	7.7	..
Burundi	24.5	25.4	18.2	19.8	6.5	5.5	2.8	5.0	..	..	4.0	*9.2*
Cambodia	..	7.7	..	11.7	..	7.5	..	16.5	..	10.4	..	12.6
Cameroon	31.2	16.3	22.6	14.0	10.1	5.4	3.4	11.3	11.0	*10.5*	10.2	*10.0*
Canada	85.9	103.3	74.3	79.8	59.8	59.4	1.6	0.6	1.3	1.4	5.7	–0.8
Central African Republic	12.9	10.0	15.3	19.6	1.8	1.5	2.8	6.3	11.0	*10.5*	10.2	*10.0*
Chad	10.9	9.8	15.8	12.2	0.6	0.6	3.4	17.7	11.0	*10.5*	10.2	*10.0*
Chile	73.0	64.7	40.7	45.2	32.8	35.2	3.8	2.8	8.6	3.7	40.5	9.9
China	90.0	106.3	79.2	122.9	41.4	71.6	15.7	19.7	0.7	3.0	1.0	2.9
Hong Kong, China	156.3	167.7	*181.7*	254.4	*166.8*	241.4	0.1	0.2	3.3	3.5	1.7	3.7
Colombia	36.2	47.0	29.8	38.9	19.3	28.2	26.3	10.1	8.8	10.1	36.9	28.5
Congo, Dem. Rep.	25.3	*1.7*	12.9	*6.7*	2.1	*2.0*	49.0	*4.6*	..	..	..	..
Congo, Rep.	29.1	16.9	22.0	15.0	6.1	2.6	2.0	9.3	11.0	*10.5*	10.2	*10.0*
Costa Rica	29.9	37.4	42.7	42.4	30.0	30.0	71.0	65.1	11.4	9.5	24.2	16.7
Côte d'Ivoire	44.5	28.8	28.8	26.9	10.9	8.8	2.1	2.6	9.0	..	7.7	..
Croatia	..	*46.4*	..	*35.2*	..	*24.2*	..	6.3	*499.3*	11.2	*1,153.9*	9.7
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	..	79.8	..	71.2	..	45.9	..	12.7	..	5.5	..	7.4
Denmark	63.0	56.0	59.0	59.1	29.4	28.5	1.1	6.7	6.2	5.1	5.8	2.0
Dominican Republic	31.3	31.0	25.7	30.1	13.1	18.5	21.1	18.3	*15.2*	7.6	*29.3*	15.2
Ecuador	17.2	36.9	23.3	36.0	12.9	27.2	23.1	7.9	–6.0	14.9	29.2	37.3
Egypt, Arab Rep.	106.8	86.6	87.9	82.2	60.7	63.2	17.1	13.0	7.0	4.0	10.7	8.0
El Salvador	32.0	43.9	30.6	45.7	19.6	35.9	33.4	28.7	3.2	4.3	12.9	10.3
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	*65.0*	29.6	*136.2*	30.0	*93.5*	9.7	*43.1*	14.9	..	13.6	*26.6*	14.1
Ethiopia	67.3	44.3	42.0	44.2	12.5	19.8	23.3	12.7	3.6	3.5	–2.3	4.7
Finland	84.3	56.5	55.2	51.2	46.6	16.4	4.1	4.4	4.1	3.3	3.3	–0.5
France	106.3	102.2	64.6	71.3	38.7	47.4	1.0	0.4	6.0	2.8	2.2	0.6
Gabon	20.0	16.6	17.8	15.6	6.6	5.7	2.0	9.2	11.0	*10.5*	10.2	*10.0*
Gambia, The	3.4	10.0	20.7	28.6	8.8	13.5	8.8	13.2	15.2	13.0	18.2	19.7
Georgia	..	..	..	..	..	..	..	..	..	..	..	..
Germany	*110.0*	141.5	*64.4*	71.4	*44.2*	46.6	3.5	1.5	4.5	6.4	3.3	3.4
Ghana	13.2	27.0	14.1	18.9	3.4	6.4	20.2	7.6	..	..	..	..
Greece	103.8	*84.1*	72.3	*65.8*	58.2	*51.2*	22.4	25.6	8.1	8.8	19.3	13.2
Guatemala	17.4	19.7	21.2	26.5	11.8	15.4	31.8	28.8	5.1	12.8	15.0	12.9
Guinea	*5.4*	6.8	0.8	9.7	0.8	2.0	6.2	14.7	0.2	*4.0*	12.9	*15.5*
Guinea-Bissau	42.1	*7.4*	16.5	*15.7*	4.4	5.8	10.8	*18.2*	13.1	*4.5*	37.4	*46.2*
Haiti	32.9	25.8	31.4	31.6	15.9	20.6	74.9	30.7	..	10.3	..	15.2
Honduras	40.9	29.2	33.6	39.9	18.8	25.3	6.6	22.2	8.3	10.8	8.7	26.3

Financial depth and efficiency 5.4

	Domestic credit provided by banking sector		Liquid liabilities		Quasi-liquid liabilities		Ratio of bank liquid reserves to bank assets		Interest rate spread		Spread over LIBOR	
	% of GDP		% of GDP		% of GDP		%		Lending minus deposit rate percentage points		Lending rate minus LIBOR percentage points	
	1990	**1997**	**1990**	**1997**	**1990**	**1997**	**1990**	**1997**	**1990**	**1997**	**1990**	**1997**
Hungary	82.6	*49.1*	43.8	*41.9*	19.0	*23.6*	28.5	*49.0*	4.1	3.2	20.5	16.0
India	54.7	49.7	45.8	51.7	29.9	34.7	14.8	10.9	..	..	8.2	8.1
Indonesia	45.5	58.0	40.4	55.6	29.1	44.6	4.5	3.9	3.3	1.8	12.5	16.1
Iran, Islamic Rep.	70.8	*45.7*	57.6	*40.8*	31.1	*22.2*	66.0	58.9	..	..	..	..
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	58.1	*44.6*	44.5	*75.6*	32.4	*61.9*	4.8	*2.8*	5.0	6.1	3.0	0.8
Israel	106.2	82.3	70.2	86.9	63.6	80.2	11.9	13.4	12.0	5.6	18.1	12.9
Italy	90.6	92.9	71.0	54.2	35.7	21.1	12.9	5.1	7.3	4.9	5.8	4.0
Jamaica	34.8	39.2	51.0	51.7	37.8	36.1	37.4	27.8	6.6	22.3	22.2	30.5
Japan	266.8	296.0	187.5	210.5	159.6	170.2	1.5	1.2	3.4	2.1	–1.4	–3.3
Jordan	117.9	90.9	131.2	102.0	77.8	69.3	20.5	36.9	2.2	3.2	2.0	6.5
Kazakhstan	..	6.5	..	9.0	..	..	..	*16.0*	..	..	..	..
Kenya	52.9	53.3	43.3	49.6	29.3	34.5	9.9	13.7	5.1	13.5	10.4	24.5
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	65.3	86.1	54.3	87.9	45.5	79.6	6.3	1.9	0.0	1.1	1.7	6.1
Kuwait	*243.0*	102.1	*192.2*	82.7	*153.9*	69.1	*1.2*	0.7	*0.4*	2.9	*4.1*	3.0
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	9.8	..	43.6
Lao PDR	5.1	16.1	7.2	18.4	3.1	14.8	3.4	14.7	*2.5*	*11.0*	*20.0*	*21.5*
Latvia	..	15.2	..	27.9	..	10.3	..	6.9	..	9.4	..	9.5
Lebanon	132.6	122.5	193.7	150.1	170.9	141.7	3.9	16.4	23.1	6.9	31.6	14.5
Lesotho	30.1	–25.3	38.8	33.1	22.4	15.7	24.1	23.1	7.4	6.2	12.1	12.3
Libya	..	..	..	..	..	..	40.8	54.0	1.5	..	–1.3	..
Lithuania	..	11.7	..	18.9	..	5.6	..	10.5	..	6.5	..	8.6
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	26.2	13.9	17.8	24.0	5.3	9.2	8.5	24.4	5.3	15.6	17.5	24.2
Malawi	20.5	8.3	22.0	14.3	12.2	6.5	32.8	43.7	8.9	18.0	12.7	22.5
Malaysia	77.9	165.1	66.3	135.7	44.3	104.8	5.9	11.3	1.3	1.8	–1.1	3.8
Mali	13.4	12.1	20.0	23.4	5.4	6.0	50.8	11.2	9.0	..	7.7	..
Mauritania	54.7	7.8	28.5	16.0	7.0	5.5	6.1	6.7	5.0	..	1.7	..
Mauritius	45.1	72.2	63.3	79.6	49.1	67.2	8.8	5.5	5.4	9.8	9.7	13.2
Mexico	37.7	30.0	22.8	30.1	16.4	21.5	4.2	49.4	..	9.9	..	18.8
Moldova	*62.8*	26.7	*70.3*	22.2	*35.4*	7.2	*8.3*	2.6	..	9.9	..	27.6
Mongolia	*68.5*	10.2	*52.4*	25.0	*13.8*	13.8	*2.0*	8.7	..	36.9	..	69.1
Morocco	60.1	59.8	61.0	67.3	18.4	19.0	11.3	6.9	0.5	..	0.7	..
Mozambique	20.9	3.5	32.7	26.1	6.5	4.8	61.5	16.9	..	..	..	..
Myanmar	32.7	28.6	27.9	27.3	7.8	5.9	318.6	13.4	2.1	4.0	–0.3	10.7
Namibia	19.5	55.4	23.4	48.2	13.7	29.0	4.4	3.5	*10.6*	7.5	*17.4*	14.4
Nepal	28.9	35.6	32.2	38.9	18.5	25.1	12.7	10.2	..	..	6.1	8.8
Netherlands	107.5	132.6	84.1	86.0	60.1	56.2	0.3	0.2	8.4	3.0	3.4	0.4
New Zealand	74.3	98.3	66.0	87.1	32.5	52.5	2.9	1.5	4.4	4.1	7.7	5.6
Nicaragua	206.6	*148.6*	56.9	*44.1*	23.1	*34.1*	20.2	25.3	12.5	8.6	13.7	15.3
Niger	16.2	10.2	19.8	9.1	8.3	2.3	42.9	10.6	9.0	..	7.7	..
Nigeria	23.7	10.3	23.6	13.3	10.3	4.8	11.6	16.9	5.5	13.1	17.0	14.6
Norway	89.5	73.3	59.9	52.3	27.0	13.9	0.5	1.9	4.6	2.3	5.9	0.2
Oman	16.6	*29.2*	28.9	*32.5*	19.3	*22.4*	6.9	3.9	1.4	2.0	1.4	3.5
Pakistan	50.9	51.8	39.8	49.5	10.0	20.4	8.9	9.4	..	..	..	..
Panama	52.7	*74.4*	41.1	*67.3*	33.0	*57.1*	..	..	3.6	3.6	3.7	4.9
Papua New Guinea	35.8	35.7	35.2	40.1	24.0	25.0	3.2	2.4	6.9	3.1	7.2	4.7
Paraguay	14.9	25.5	21.4	28.9	12.8	20.3	31.0	24.1	8.1	14.0	22.7	21.3
Peru	16.2	17.7	19.9	25.8	9.5	17.1	22.0	27.7	2,335.0	14.9	4,766.2	24.2
Philippines	26.9	84.1	36.8	66.5	28.2	55.5	11.7	5.7	4.6	6.1	15.8	10.5
Poland	19.5	36.9	34.0	39.6	17.2	25.0	20.6	8.0	462.5	5.6	495.9	19.2
Portugal	71.7	99.3	82.2	97.0	57.9	66.8	17.5	2.1	7.8	4.6	13.5	3.4
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	79.7	9.7	60.4	24.9	32.7	17.7	1.2	9.1	..	..	..	..
Russian Federation	..	25.9	..	17.9	..	7.4	..	13.3	..	15.3	..	26.3

5.4 Financial depth and efficiency

	Domestic credit provided by banking sector		**Liquid liabilities**		**Quasi-liquid liabilities**		**Ratio of bank liquid reserves to bank assets**		**Interest rate spread**		**Spread over LIBOR**	
	% of GDP		% of GDP		% of GDP		%		Lending minus deposit rate percentage points		Lending rate minus LIBOR percentage points	
	1990	**1997**	**1990**	**1997**	**1990**	**1997**	**1990**	**1997**	**1990**	**1997**	**1990**	**1997**
Rwanda	17.1	12.5	14.9	15.7	7.0	5.8	4.3	22.0	6.3	..	4.9	..
Saudi Arabia	58.7	34.0	47.9	51.8	21.9	24.9	5.6	3.7	..	..	..	..
Senegal	33.8	22.0	22.9	21.9	9.7	9.0	14.1	5.2	9.0	..	7.7	..
Sierra Leone	26.3	62.1	14.5	15.7	4.0	5.3	64.1	46.9	12.0	14.0	44.2	18.1
Singapore	74.1	84.8	120.9	113.1	98.4	93.9	3.7	3.5	2.7	2.9	–1.0	0.6
Slovak Republic	..	71.8	..	68.2	..	42.8	..	7.9	..	5.2	..	12.9
Slovenia	*36.8*	35.5	*34.2*	42.5	*25.8*	34.6	*2.7*	4.1	*142.0*	6.8	*818.6*	14.3
South Africa	102.7	160.3	46.8	50.4	28.5	21.3	3.3	2.8	2.1	4.6	12.7	14.2
Spain	109.0	108.6	76.6	75.5	45.3	45.5	9.2	3.0	5.4	2.1	7.7	0.3
Sri Lanka	43.1	32.2	35.2	41.1	22.9	31.5	9.9	12.1	–6.4	–2.2	4.7	6.2
Sudan	20.4	7.3	20.1	9.8	2.9	3.6	79.5	33.3	..	..	..	..
Sweden	145.5	73.0	46.6	*45.0*	..	..	1.9	0.5	6.8	4.5	8.4	1.2
Switzerland	179.0	184.2	145.2	144.6	118.6	106.9	1.1	0.9	–0.9	3.5	–0.9	–1.3
Syrian Arab Republic	56.6	*56.8*	54.7	23.6	10.5	23.6	46.0	8.1	..	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	39.2	13.8	22.6	21.9	7.2	10.3	5.3	9.2	..	21.4	..	23.5
Thailand	91.1	140.4	74.9	89.9	66.0	81.0	3.1	6.1	2.2	3.1	6.1	7.9
Togo	21.3	23.3	36.1	22.9	19.1	8.6	59.0	8.4	9.0	..	7.7	..
Trinidad and Tobago	58.5	57.8	54.6	48.4	42.7	36.2	13.5	15.3	6.9	8.4	4.6	9.6
Tunisia	62.5	67.7	51.5	51.7	26.7	29.5	1.6	3.1	..	..	..	..
Turkey	25.9	34.1	24.1	36.6	16.4	31.4	16.3	10.3	..	..	..	..
Turkmenistan	..	*1.7*	..	*11.5*	..	*1.0*	..	*11.4*	..	..	..	..
Uganda	*17.7*	6.0	7.6	11.5	1.4	3.9	17.9	15.7	7.4	9.5	30.4	15.6
Ukraine	*83.2*	17.2	*50.1*	13.6	*9.0*	3.8	*49.0*	8.1	..	30.9	..	43.4
United Arab Emirates	35.2	*48.6*	47.0	*56.7*	38.2	*42.2*	4.4	7.3	..	..	..	..
United Kingdom	123.0	129.3	..	..	..	..	0.5	0.4	2.2	3.0	6.4	0.8
United States	114.4	148.7	67.8	61.3	51.2	45.0	2.3	1.7	..	..	1.7	2.7
Uruguay	60.7	39.0	64.5	43.0	57.2	37.5	31.1	13.7	76.6	51.9	166.1	65.8
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	37.4	18.5	41.1	23.4	29.4	10.3	21.9	28.9	0.5	4.4	19.9	13.4
Vietnam	*15.9*	22.6	*22.7*	23.9	*9.3*	10.4	*13.3*	12.1	..	5.3	..	9.4
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	62.0	26.4	56.3	39.8	10.7	17.3	121.2	21.5	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	64.5	44.2	23.8	17.5	12.6	10.6	33.7	10.0	9.4	12.2	26.8	40.9
Zimbabwe	41.7	61.3	41.8	46.8	30.3	26.7	12.2	10.2	2.9	13.9	3.4	26.8
World	**125.9 w**	**140.1 w**	**85.4 w**	**89.8 w**	**64.6 w**	**66.2 w**	**11.0 m**	**9.7 m**				
Low income	46.0	40.1	37.8	41.5	21.6	25.2	14.1	12.1				
Middle income	64.5	60.1	43.7	55.2	26.5	36.6	13.5	10.1				
Lower middle income	*69.9*	71.5	*64.8*	71.9	*37.3*	45.7	18.8	10.1				
Upper middle income	60.5	49.2	30.7	39.1	19.9	28.0	8.1	10.1				
Low & middle income	61.3	57.6	42.7	53.5	25.6	35.2	13.8	11.2				
East Asia & Pacific	76.6	103.4	67.6	105.0	41.6	68.5	5.2	11.3				
Europe & Central Asia	..	30.8	..	28.2	..	17.5	..	9.8				
Latin America & Carib.	59.4	36.6	25.4	30.2	17.7	22.6	21.9	23.1				
Middle East & N. Africa	69.5	56.2	62.1	62.5	30.7	37.9	14.2	10.6				
South Asia	51.4	47.8	43.1	49.2	26.5	31.7	12.7	10.2				
Sub-Saharan Africa	58.1	78.8	33.3	34.9	17.7	15.7	11.9	10.9				
High income	138.7	160.9	94.6	99.6	73.1	74.6	2.3	1.9				
Europe EMU	99.0	117.9	69.5	70.6	42.0	44.0	3.8	2.1				

Financial depth and efficiency 5.4

About the data

Households and institutions save and invest independently. The financial system's role is to intermediate between them and to cycle funds. Savers accumulate claims on financial institutions, which pass these funds to their final users. As an economy develops, this indirect lending by savers to investors becomes more efficient and gradually increases financial assets relative to GDP. This wealth allows increased saving and investment, facilitating and enhancing economic growth. As more specialized savings and financial institutions emerge, more financing instruments become available, reducing risks and costs to liability holders. As securities markets mature, savers can invest their resources directly in financial assets issued by firms.

The ratio of domestic credit provided by the banking sector to GDP is used to measure the growth of the banking system because it reflects the extent to which savings are financial. Liquid liabilities include bank deposits of generally less than one year plus currency. Their ratio to GDP indicates the ease with which their owners can use them to buy goods and services without incurring any cost. Quasi-liquid liabilities are long-term deposits and assets—such as certificates of deposit, commercial paper, and bonds—that can be converted into currency or demand deposits, but at a cost.

No less important than the size and structure of the financial sector is its efficiency, as indicated by the margin between the cost of mobilizing liabilities and the earnings on assets. Small margins are crucial for economic growth because they lower interest rates and thus the overall cost of investment. Interest rates reflect the responsiveness of financial institutions to competition and price incentives. The interest rate spread, also known as the intermediation margin, is a summary measure of a banking system's efficiency. It may not be a reliable measure of efficiency to the extent that information about interest rates is inaccurate, banks do not monitor all bank managers, or the government sets deposit and lending rates. The spread over LIBOR reflects the differential between a country's lending rate and the London interbank offered rate (ignoring expected changes in the exchange rate). Interest rates are expressed as annual averages.

In some countries financial markets are distorted by restrictions on foreign investment, selective credit controls, and controls on deposit and lending rates. Interest rates may reflect the diversion of resources to finance the public sector deficit through statutory reserve requirements and direct borrowing from the banking system. And where state-owned banks dominate the financial sector, noncommercial considerations may unduly influence credit allocation.

The indicators in the table provide quantitative assessments of each country's financial sector, but qualitative assessments of policies, laws, and regulations are needed to analyze overall financial conditions. Recent events in East Asia highlight the risks of weak financial intermediation, poor corporate governance, and deficient government policies, including procyclical macroeconomic policy responses to large capital inflows.

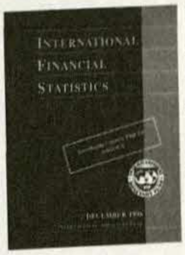
The accuracy of financial data depends on the quality of accounting systems, which are weak in some developing economies. Some of the indicators in the table are highly correlated, particularly the ratios of domestic credit, liquid liabilities, and quasi-liquid liabilities to GDP, because changes in liquid and quasi-liquid liabilities flow directly from changes in domestic credit. Moreover, the precise definition of the financial aggregates presented varies by country. *World Development Indicators 1999* introduces an additional indicator, the ratio of bank liquid reserves to bank assets, which captures the banking system's liquidity. In countries whose banking system is liquid, adverse macroeconomic conditions should be less likely to lead to banking and financial crises. Data on domestic credit and liquid and quasi-liquid liabilities are cited on an end-of-year basis.

The indicators reported here do not capture the activities of the informal sector, which remains an important source of finance in developing economies. Personal credit or credit extended through community-based pooling of assets may be the only source of credit available to small farmers, small businesses, or home-based producers. And in financially repressed economies the rationing of formal credit forces many borrowers and lenders to turn to the informal market and self-financing.

Definitions

- **Domestic credit provided by banking sector** includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities, deposit money banks, and other banking institutions for which data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions include savings and mortgage loan institutions and building and loan associations. • **Liquid liabilities** are also known as broad money, or M3. They are the sum of currency and deposits in the central bank (M0), plus transferable deposits and electronic currency (M1), plus time and savings deposits, foreign currency transferable deposits, certificates of deposit, and securities repurchase agreements (M2), plus travelers checks, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents.
- **Quasi-liquid liabilities** are the M3 money supply less M1. • **Ratio of bank liquid reserves to bank assets** is the ratio of domestic currency holdings and deposits with the monetary authorities to claims on other governments, nonfinancial public enterprises, the private sector, and other banking institutions. • **Interest rate spread** is the interest rate charged by banks on loans to prime customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits. • **Spread over LIBOR** (London interbank offered rate) is the interest rate charged by banks on loans to prime customers minus LIBOR. LIBOR is the most commonly recognized international interest rate and is quoted in several currencies. The average three-month LIBOR on U.S. dollar deposits is used here.

Data sources


International
Financial
Statistics

Data on credit, liabilities, and interest rates are collected from central banks and finance ministries and reported in the print and electronic versions of the International Monetary Fund's *International Financial Statistics*.

5.5 Tax policies

	Tax revenue	Taxes on income, profits, and capital gains		Domestic taxes on goods and services		Export duties		Import duties		Highest marginal tax rate[a]		
	% of GDP	% of total taxes		% of value added of industry and services		% of exports		% of imports		Individual rate %	Individual on income over $	Corporate rate %
	1997	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1998**	**1998**	**1998**
Albania	*16.6*	..	*10.7*	..	*19.0*	..	*0.0*	..	*10.0*	..	..	..
Algeria	*31.2*	..	*71.6*	..	*4.8*	..	..	..	..	..	..	..
Angola	..	..	..	..	..	..	..	..	..	..	..	..
Argentina	11.2	0.0	14.9	2.8	5.3	0.0	0.5	0.0	9.3	33	120,000	33
Armenia	..	..	..	..	..	..	..	..	..	..	..	..
Australia	23.5	67.6	72.6	5.4	*5.4*	0.5	0.0	8.5	3.9	47	32,404	36
Austria	*34.4*	22.8	*24.1*	9.1	*9.4*	0.2	*0.0*	1.6	*0.3*	50	55,564	34
Azerbaijan	..	..	..	..	..	..	..	..	..	40	1,850	32
Bangladesh	..	14.8	..	3.2	..	3.9	..	16.4	..	..	..	..
Belarus	*29.4*	..	*8.3*	..	*16.0*	..	..	..	..	..	..	..
Belgium	*43.0*	40.2	*36.4*	..	..	0.0	*0.0*	0.0	*0.0*	55	65,547	39
Benin	..	..	..	..	..	2.2	..	..	..	..	..	..
Bolivia	15.0	..	8.4	..	10.5	..	0.0	..	5.5	13	..	25
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	*16.5*	45.5	*51.3*	0.3	*1.9*	0.1	*0.0*	21.8	*18.9*	30	21,008	15
Brazil	..	13.6	..	9.0	..	0.0	..	16.5	..	25	19,459	15
Bulgaria	25.2	..	28.4	..	10.9	..	0.1	..	4.6	40	7,232	30
Burkina Faso	..	20.1	..	2.9	..	3.6	..	20.7	..	..	..	..
Burundi	12.7	20.4	24.1	10.1	14.5	..	*2.3*	..	18.9	..	..	..
Cambodia	..	..	..	..	..	..	..	..	..	..	..	..
Cameroon	*9.4*	23.7	*23.4*	4.1	*5.4*	7.5	*5.1*	21.3	*19.7*	60	12,345	39
Canada	..	60.8	..	3.5	..	1.1	..	4.6	..	29	41,370	38
Central African Republic	..	*17.7*	..	*6.0*	..	*9.2*	..	*23.9*	..	..	..	..
Chad	..	..	..	..	..	..	..	..	..	..	..	..
Chile	18.9	22.0	21.3	12.4	11.3	0.0	..	7.0	..	45	6,748	15
China	*4.9*	..	*13.5*	..	*4.7*	..	*0.0*	..	*2.8*	45	12,077	30
Hong Kong, China	..	..	..	..	..	..	..	..	..	20	11,688	17
Colombia	..	28.9	..	3.4	..	7.2	..	12.3	..	35	38,764	35
Congo, Dem. Rep.	*4.9*	34.5	*35.8*	1.6	*2.3*	..	..	..	..	50	13,167	..
Congo, Rep.	..	63.8	..	3.1	..	0.1	..	14.0	..	..	..	..
Costa Rica	*23.5*	14.6	*12.1*	6.6	..	6.6	*0.6*	7.0	*5.3*	25	15,746	30
Côte d'Ivoire	..	14.0	..	7.6	..	8.0	..	28.9	..	10	3,950	35
Croatia	*42.8*	..	11.9	..	*27.1*	..	0.0	..	8.1	..	..	..
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	32.7	..	14.0	..	..	..	0.0	..	1.7	40	23,750	35
Denmark	*33.7*	40.6	*45.4*	20.3	*18.9*	*0.0*	*0.0*	*0.1*	*0.1*	58	..	34
Dominican Republic	*13.9*	24.8	*17.9*	3.8	*5.8*	6.2	*0.0*	15.0	*11.9*	25	16,176	25
Ecuador	..	46.6	..	2.5	..	3.0	..	16.3	..	25	66,226	25
Egypt, Arab Rep.	*21.5*	24.8	*28.1*	8.5	*6.2*	0.0	*0.0*	26.3	*18.8*	32	13,749	40
El Salvador	..	..	..	..	..	..	..	..	..	30	22,857	25
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	30.1	..	18.1	..	17.5	..	0.0	..	0.0	26	..	26
Ethiopia	..	24.7	..	9.2	..	35.1	..	16.4	..	..	..	..
Finland	*28.4*	30.9	*34.3*	16.5	*16.7*	0.0	*0.0*	1.9	*0.0*	38	56,450	28
France	39.2	19.1	20.9	12.8	*12.2*	0.0	0.0	0.1	0.0	..	..	33
Gabon	..	60.2	..	1.8	..	1.7	..	38.3	..	55	2,290	40
Gambia, The	..	18.1	..	1.2	..	12.5	..	21.8	..	..	..	..
Georgia	5.2	..	12.0	..	5.6	..	..	..	..	..	..	..
Germany	26.8	19.4	*16.0*	..	..	0.0	*0.0*	0.0	*0.0*	53	66,988	30
Ghana	..	22.0	..	4.6	..	30.5	..	14.5	..	35	7,269	35
Greece	*19.6*	19.5	36.7	10.2	*16.3*	0.0	0.0	6.3	0.1	45	55,923	35
Guatemala	..	12.4	..	3.9	..	9.9	..	7.6	..	25	29,221	30
Guinea	..	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	..	15.9	..	..	..	10.2	..	12.3	..	..	..	..
Honduras	..	32.9	..	5.1	..	7.5	..	7.8	..	30	75,758	15

Tax policies 5.5

	Tax revenue	Taxes on income, profits, and capital gains		Domestic taxes on goods and services		Export duties		Import duties		Highest marginal tax rate[a]		
	% of GDP	% of total taxes		% of value added of industry and services		% of exports		% of imports		Individual		Corporate rate %
										rate %	on income over $	
	1997	1980	1997	1980	1997	1980	1997	1980	1997	1998	1998	1998
Hungary	32.5	*22.1*	21.2	*28.2*	15.1	*0.1*	0.0	*7.5*	4.0	42	5,394	18
India	10.8	21.9	29.5	8.9	5.8	2.0	0.1	35.3	29.4	40	5,059	40
Indonesia	*14.7*	82.0	*58.0*	2.4	*6.0*	*0.9*	*0.1*	*5.1*	*2.7*	30	8,938	30
Iran, Islamic Rep.	*6.7*	12.2	32.8	1.0	*1.7*	0.0	*0.0*	20.9	*11.1*	54	173,227	12
Iraq	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	*32.4*	38.6	*40.9*	..	..	0.0	*0.0*	6.2	*0.0*	46	14,493	32
Israel	36.8	47.3	42.1	..	..	0.0	0.0	4.5	0.7	50	57,387	36
Italy	42.2	32.1	36.9	..	..	0.0	0.0	0.1	0.0	46	181,801	37
Jamaica	..	35.1	..	15.6	..	0.0	..	2.3	..	25	2,215	33
Japan	..	74.7	..	2.5	..	0.0	..	2.3	..	50	230,592	38
Jordan	*22.4*	17.0	*16.2*	1.6	*10.7*	0.0	*0.0*	21.2	*12.4*	..	..	..
Kazakhstan	..	..	..	..	..	..	..	..	..	40	..	30
Kenya	*23.4*	33.3	*38.9*	14.8	*16.8*	1.3	*0.0*	11.8	*14.4*	33	384	35
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	18.6	25.5	31.0	9.5	7.7	0.0	0.0	7.6	4.3	40	56,529	28
Kuwait	1.2	63.6	18.5	0.2	*0.0*	0.0	0.0	3.0	3.5	0	..	6
Kyrgyz Republic	12.5	..	12.2	..	19.0	..	0.0	..	2.2	40	250	30
Lao PDR	..	..	..	..	..	..	..	..	..	..	..	..
Latvia	29.2	..	13.9	..	17.0	..	0.0	..	1.4	25	..	25
Lebanon	*14.1*	..	*8.9*	..	*0.9*	..	..	..	*14.9*	..	..	..
Lesotho	30.7	*15.6*	19.4	*5.4*	5.9	6.2	..	21.6	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	25.4	..	17.7	..	17.2	..	0.0	..	1.3	33	..	29
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	*8.5*	17.1	*18.8*	8.4	*3.3*	3.0	*0.9*	17.6	*28.6*	..	..	..
Malawi	..	38.9	..	11.7	..	0.0	..	16.8	..	38	1,969	38
Malaysia	19.3	41.9	44.4	5.7	7.1	9.1	0.5	9.0	3.4	30	38,961	28
Mali	..	20.5	..	7.9	..	3.0	..	8.0	..	..	..	..
Mauritania	..	..	..	..	..	..	..	..	..	..	..	..
Mauritius	17.6	17.3	15.1	4.8	*7.7*	8.6	0.0	16.2	13.0	30	2,471	15
Mexico	*12.8*	36.9	*31.8*	8.3	*9.3*	0.5	*0.0*	9.3	*2.2*	35	25,492	34
Moldova	..	..	..	..	..	..	..	..	..	..	..	..
Mongolia	*18.7*	..	*29.2*	..	*7.3*	..	*0.0*	..	*5.0*	..	..	..
Morocco	*23.8*	22.0	*23.7*	9.9	*13.1*	2.2	*0.0*	22.3	*14.8*	44	6,203	35
Mozambique	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	*4.0*	4.9	*29.4*	12.7	*4.3*	0.0	*0.0*	19.3	*74.2*	..	..	..
Namibia	..	..	..	..	..	..	..	..	..	35	16,461	35
Nepal	8.9	6.6	15.0	8.0	7.4	5.4	0.8	16.0	8.8	..	..	..
Netherlands	43.0	33.1	26.6	10.6	*10.8*	0.0	0.0	0.0	0.0	60	51,373	35
New Zealand	31.2	75.0	66.3	6.9	..	0.1	0.0	4.4	4.5	33	19,922	33
Nicaragua	*23.9*	8.9	*11.8*	11.3	*16.4*	3.9	*0.0*	8.1	*11.2*	30	18,083	30
Niger	..	28.1	..	4.6	..	2.6	..	17.0	..	..	..	..
Nigeria	..	..	..	..	..	..	..	..	..	25	1,600	28
Norway	*32.5*	30.3	*24.3*	15.2	*15.5*	0.1	*0.0*	0.8	*1.0*	28	6,835	28
Oman	*8.5*	92.4	80.8	0.2	..	0.0	0.0	1.4	2.5	0	..	30
Pakistan	12.9	16.8	26.2	8.6	6.7	1.9	0.0	25.2	18.3	..	..	..
Panama	*15.9*	29.0	*29.9*	5.2	..	0.5	*0.2*	3.0	..	30	200,000	15
Papua New Guinea	..	67.5	..	4.2	..	1.4	..	8.0	..	47	57,803	15
Paraguay	..	16.6	..	2.7	..	0.5	..	8.4	..	0	..	30
Peru	14.0	28.1	23.5	7.1	8.4	10.9	0.0	17.1	10.3	30	50,036	30
Philippines	17.0	23.6	39.8	7.8	6.8	1.0	0.0	13.4	8.8	34	12,464	34
Poland	35.2	..	27.7	..	*12.3*	..	0.0	..	5.3	40	14,372	36
Portugal	*31.1*	20.9	*29.2*	..	..	0.0	*0.0*	4.4	*0.0*	40	34,186	37
Puerto Rico	..	..	..	..	..	..	..	..	..	33	50,000	20
Romania	*24.4*	0.0	*31.0*	..	*8.7*	0.0	*0.0*	0.0	*5.7*	45	3,672	38
Russian Federation	*17.9*	..	*15.8*	..	*8.0*	..	*4.3*	..	*3.3*	35	8,587	35

5.5 Tax policies

	Tax revenue	Taxes on income, profits, and capital gains		Domestic taxes on goods and services		Export duties		Import duties		Highest marginal tax rate[a]		
	% of GDP	% of total taxes		% of value added of industry and services		% of exports		% of imports		Individual rate %	Individual on income over $	Corporate rate %
	1997	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1998**	**1998**	**1998**
Rwanda	..	20.7	..	5.3	..	21.3	..	17.7	..	..	..	..
Saudi Arabia	..	..	..	..	..	..	..	..	..	0	..	45
Senegal	..	21.4	..	7.8	..	2.8	..	26.9	..	50	20,821	35
Sierra Leone	10.2	25.0	17.6	4.1	7.2	10.1	*0.0*	17.2	*20.3*	..	..	..
Singapore	15.9	47.0	41.7	4.1	4.7	0.0	0.0	0.9	0.2	28	238,095	26
Slovak Republic	..	..	..	..	..	..	..	..	..	42	31,576	40
Slovenia	..	..	..	..	..	..	..	..	..	..	..	..
South Africa	27.5	64.1	58.3	6.4	12.0	0.1	0.0	3.0	0.4	45	20,576	35
Spain	*28.3*	25.2	*32.8*	..	..	0.0	*0.0*	6.0	*0.0*	48	69,216	35
Sri Lanka	16.2	16.4	14.5	8.0	14.6	22.0	0.0	9.6	8.6	30	4,862	35
Sudan	..	17.2	..	5.2	..	3.4	..	31.1	..	..	..	..
Sweden	37.0	21.1	12.8	11.7	..	0.0	0.0	1.5	0.7	31	27,198	28
Switzerland	*21.1*	15.1	*15.5*	..	..	0.0	*0.0*	4.0	*0.6*	13	46,382	45
Syrian Arab Republic	*16.5*	24.7	*32.2*	1.8	..	1.7	*7.0*	11.6	*29.7*	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	..	35.2	..	..	..	9.7	..	9.2	..	35	13,405	30
Thailand	16.1	19.3	35.5	8.6	8.6	4.4	0.1	11.1	6.0	37	84,836	30
Togo	..	38.6	..	6.4	..	3.3	..	15.2	..	..	..	..
Trinidad and Tobago	*23.4*	85.7	*58.7*	1.6	*7.6*	0.0	*0.0*	9.8	*4.4*	35	8,065	35
Tunisia	*24.8*	19.2	*18.8*	8.7	*7.2*	1.1	*0.2*	20.6	*19.9*	..	..	..
Turkey	*15.2*	61.8	*38.5*	5.1	*11.5*	0.0	*0.0*	8.9	*1.8*	45	59,259	25
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	..	11.8	..	4.6	..	55.8	..	15.8	..	30	4,316	30
Ukraine	..	..	..	..	..	..	..	..	..	40	10,754	30
United Arab Emirates	..	..	..	0.0	..	..	..	..	..	..	..	20
United Kingdom	*33.4*	43.4	*38.9*	11.5	*13.9*	0.0	*0.0*	0.1	*0.1*	40	44,580	31
United States	19.8	61.6	59.4	0.9	*0.7*	0.0	0.0	3.0	2.1	40	278,450	35
Uruguay	27.9	11.5	13.6	11.1	11.3	0.0	0.1	19.2	6.0	0	..	30
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	17.5	79.4	53.0	1.0	7.5	0.0	0.0	9.6	11.0	..	..	..
Vietnam	..	..	..	..	..	..	..	..	..	50	5,695	25
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	13.3	..	50.8	..	2.7	..	0.0	..	9.7	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	*17.1*	41.1	*39.6*	12.5	*9.6*	0.0	..	7.2	..	30	1,212	35
Zimbabwe	..	57.9	..	6.7	..	0.0	..	4.3	..	40	3,578	38

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Tax policies 5.5

About the data

Taxes are compulsory, unrequited payments made to governments by individuals, businesses, or institutions. They are considered unrequited because governments provide nothing specifically in return for them, although they typically are used to provide goods or services to individuals or communities. The sources of the revenue received by governments and the relative contributions of these sources are determined by policy choices about where and how to impose taxes and by changes in the structure of the economy. Tax policy may reflect concerns about distributional effects, economic efficiency (including corrections for externalities), and the practical problems of administering a tax system. There is no ideal level of taxation. But taxes influence incentives, and thus the behavior of economic actors and country competitiveness.

The level of taxation is typically measured by tax revenue as a share of GDP. Comparing levels of taxation across countries provides a quick overview of the fiscal obligations and incentives facing the private sector. In this table tax data measured in local currencies are normalized by scaling variables in the same units to ease cross-country comparisons. The table refers only to central government data, which may considerably understate the total tax burden, particularly in countries where provincial and municipal governments are large or have considerable tax authority.

Low ratios of tax collections to GDP may reflect weak administration and large-scale tax avoidance or evasion. They also may reflect the presence of a sizable parallel economy with unrecorded and undisclosed incomes. Tax collection ratios tend to rise with income, with more developed countries relying on taxes to finance a much broader range of social services and social security than less developed countries are able to provide.

As countries develop, they typically expand their capacity to tax residents directly, and indirect taxes become less important as a source of revenue. Thus the share of taxes on income, profits, and capital gains is one measure of a tax system's level of development. In the early stages of development governments tend to rely on indirect taxes because the administrative costs of collecting them are relatively low. The two main indirect taxes are international trade taxes (including customs revenues) and domestic taxes on goods and services. The table shows these domestic taxes as a percentage of value added in industry and services. Agriculture and mining are excluded from the denominator because indirect taxation of these sectors is usually negligible. What is missing here is a measure of the uniformity of these taxes across industries and along the value added chain of production. Without such data no clear inferences can be drawn about how neutral a tax system is between subsectors. "Surplus" revenues raised by some governments by charging higher prices for goods produced under monopoly by state-owned enterprises are not counted as tax revenues.

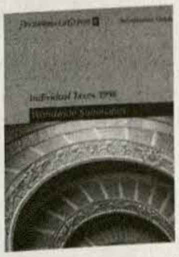
Export and import duties are shown separately because their burdens on the economy (and thus growth) are likely to be high. Export duties, typically levied on primary (particularly agricultural) products, often take the place of direct taxes on income and profits, but they reduce the incentive to export and encourage a shift to other products. High import duties penalize consumers, create protective barriers—which promote higher-priced output and inefficient production—and implicitly tax exports. By contrast, lower trade taxes enhance openness—to foreign competition, knowledge, technologies, and resources—energizing development in many ways. The economies growing fastest over the past 15 years have not relied on tax revenues from imports. Seeing this pattern, many developing countries have lowered tariffs over the past decade, and this trend is expected to continue. In some countries, such as members of the European Union, most customs duties are collected by a supranational authority; these revenues are not reported in the individual countries' accounts.

The tax revenues collected by governments are the outcomes of systems that are often complex, containing many exceptions, exemptions, penalties, and other inducements that affect tax incidence and thus influence the decisions of workers, managers, and entrepreneurs. A potentially important influence on both domestic and international investors is a tax system's progressivity, as reflected in the highest marginal tax rate on individual and corporate income. Figures for individual marginal tax rates generally refer to employment income. For some countries the highest marginal tax rate is also the basic or flat rate, and other surtaxes, deductions, and the like may apply.

Definitions

- **Tax revenue** comprises compulsory, unrequited, nonrepayable receipts collected by central governments for public purposes. It includes interest collected on tax arrears and penalties collected on nonpayment or late payment of taxes and is shown net of refunds and other corrective transactions. • **Taxes on income, profits, and capital gains** include taxes levied by central governments on the actual or presumptive net income of individuals and profits of enterprises. Also included are taxes on capital gains, whether realized or not, on the sale of land, securities, and other assets. Social security contributions based on gross pay, payroll, or number of employees are not included, but social security contributions based on personal income after deductions and personal exemptions are included. • **Domestic taxes on goods and services** include all taxes and duties levied by central governments on the production, extraction, sale, transfer, leasing, or delivery of goods and rendering of services, or on the use of goods or permission to use goods or perform activities. These include general sales taxes, turnover or value added taxes, excise taxes, and motor vehicle taxes. • **Export duties** include all levies collected on goods at the point of export. Rebates on exported goods—that is, repayments of previously paid general consumption taxes, excise taxes, or import duties—should be deducted from the gross receipts of the appropriate taxes, not from export duty receipts. • **Import duties** comprise all levies collected on goods at the point of entry into the country. They include levies for revenue purposes or import protection, whether on a specific or ad valorem basis, as long as they are restricted to imported products. • **Highest marginal tax rate** is the highest rate shown on the schedule of tax rates applied to the taxable income of individuals and corporations. Also presented are the income levels above which the highest marginal tax rates for individuals apply.

Data sources



The definitions used here are from the International Monetary Fund's (IMF) *Manual on Government Finance Statistics* (1986). Data on tax revenues are from print and electronic editions of the IMF's *Government Finance Statistics Yearbook*. Data on individual and corporate tax rates are from PricewaterhouseCoopers's *Individual Taxes: A Worldwide Summary* (1998b) and *Corporate Taxes: A Worldwide Summary* (1998a).

5.6 Relative prices and exchange rates

	Exchange rate arrangements		Official exchange rate	Ratio of official to parallel exchange rate	Real effective exchange rate	Purchasing power parity conversion factor		Interest rate			Key agricultural producer prices	
	Classification 1997	Structure 1997	local currency units to $ 1997	1997	1990 = 100 1997	local currency units to international $ 1990	1997	Deposit % 1997	Lending % 1997	Real % 1997	Wheat $ per metric ton 1995	Maize $ per metric ton 1995
Albania	IF	U	148.9	0.9	..	2.5	48.1	*16.8*	*24.0*	*8.2*	347	178
Algeria	MF	U	57.7	0.4	..	5.2	20.8	..	..	..	399	336
Angola	P	U	229,040.1	0.8	..	0.0	106,505.1	..	..	..	..	..
Argentina	P	U	1.0	1.0	..	0.3	0.9	7.0	9.2	9.0	93	66
Armenia	IF	U	490.8	..	..	0.0	89.3	26.1	54.2	31.5	..	..
Australia	IF	U	1.3	1.0	92.9	1.4	1.4	5.1	9.3	7.4	158	176
Austria	FL	U	12.2	1.0	101.5	13.3	14.1	1.5	..	..	*270*	*159*
Azerbaijan	IF	U	3,985.4	..	..	0.1	1,569.6	..	*162.5*	*–63.0*	..	..
Bangladesh	P	U	43.9	0.8	..	12.2	13.6	8.1	14.0	12.5	186	..
Belarus	MF	M	..	..	..	0.1	7,055.1	15.6	31.8	–23.7	..	..
Belgium	FL	U	35.8	1.0	98.3	36.1	37.4	2.9	7.1	*5.3*	..	..
Benin	P	U	583.7	..	..	108.5	169.4	..	..	..	..	*187*
Bolivia	MF	U	5.3	1.0	99.2	1.1	1.9	14.7	50.0	42.4	*187*	*137*
Bosnia and Herzegovina	P	U	..	..	..	..	..	..	..	..	..	..
Botswana	P	D	3.7	1.0	..	0.9	1.5	9.3	14.1	–0.9	..	*151*
Brazil	MF	D	1.1	1.0	..	0.0	0.8	24.4	..	..	155	122
Bulgaria	P	U	1,681.9	1.0	..	1.2	513.6	46.8	84.0	–82.5	*55*	*61*
Burkina Faso	P	U	583.7	..	..	108.8	132.6	..	..	..	..	..
Burundi	P	U	352.4	0.8	119.5	45.8	83.5	..	*15.3*	*0.1*	..	..
Cambodia	MF	D	2,946.3	1.0	..	74.5	674.4	8.0	18.4	8.4	..	..
Cameroon	P	U	583.7	..	64.3	146.5	186.8	*5.5*	*16.0*	*–0.9*	..	..
Canada	IF	U	1.4	1.0	80.3	1.3	1.2	3.6	5.0	2.9	*94*	*85*
Central African Republic	P	U	583.7	*1.0*	62.1	111.0	130.8	*5.5*	*16.0*	*2.3*	..	543
Chad	P	U	583.7	..	..	108.7	135.2	*5.5*	*16.0*	*6.5*	*318*	*127*
Chile	MF	D	419.3	0.9	135.3	97.6	173.7	12.0	15.7	9.3	215	168
China	MF	U	8.3	1.0	..	1.2	1.9	5.7	8.6	7.3	*126*	98
Hong Kong, China	MF	U	7.7	1.0	..	6.1	8.4	6.0	9.5	3.5	..	..
Colombia	MF	U	1,141.0	0.9	161.1	113.3	401.0	24.1	34.2	12.5	*218*	*185*
Congo, Dem. Rep.	IF	U	*7,024.4*	..	101.7	0.0	18,567.1	..	..	..	..	..
Congo, Rep.	P	U	583.7	..	..	215.6	305.1	*5.5*	*16.0*	*12.2*	..	200
Costa Rica	MF	U	232.6	1.0	104.8	33.8	96.1	13.0	22.5	7.0	..	*176*
Côte d'Ivoire	P	U	583.7	..	69.3	157.1	229.0	..	..	..	..	..
Croatia	MF	U	6.1	0.7	..	..	4.7	4.3	15.5	*16.6*	..	..
Cuba	..	..	..	..	..	..	..	..	..	..	..	..
Czech Republic	MF	U	31.7	*1.0*	..	5.5	15.2	7.7	13.2	6.2	*104*	*118*
Denmark	FL	U	6.6	1.0	97.9	9.1	9.0	2.7	7.7	5.8	*182*	..
Dominican Republic	MF	D	14.3	1.0	121.0	2.5	5.5	13.4	21.0	11.7	..	*311*
Ecuador	MF	D	3,998.3	1.0	138.1	202.1	1,340.1	28.1	43.0	13.6	186	182
Egypt, Arab Rep.	MF	M	3.4	1.0	..	0.8	1.4	9.8	13.8	7.5	*157*	*142*
El Salvador	MF	U	8.8	0.9	..	3.5	5.8	11.8	16.1	11.0	..	164
Eritrea	IF	D	..	..	..	..	1.5	..	..	..	..	..
Estonia	P	U	13.9	0.8	..	0.1	8.5	6.2	19.8	7.6	..	..
Ethiopia	MF	U	6.7	0.9	..	0.9	1.4	7.0	10.5	6.8	..	..
Finland	FL	U	5.2	1.0	75.7	6.1	6.0	2.0	5.3	4.0	199	..
France	FL	U	5.8	1.0	97.0	6.4	6.3	3.5	6.3	5.1	*170*	*165*
Gabon	P	U	583.7	..	53.5	270.2	345.5	*5.5*	*16.0*	*16.6*	..	..
Gambia, The	IF	U	10.2	0.9	98.1	2.0	2.4	12.5	25.5	22.1	..	..
Georgia	MF	U	..	..	..	0.0	0.6	..	..	..	..	..
Germany	FL	U	1.7	1.0	103.4	..	2.1	2.7	9.1	8.0	*167*	*168*
Ghana	IF	U	2,050.2	1.0	..	101.3	478.5	35.8	..	..	..	*144*
Greece	FL	U	273.1	1.0	115.5	129.9	242.8	10.1	18.9	11.9	273	213
Guatemala	IF	U	6.1	1.0	..	1.2	2.5	5.8	18.6	9.5	*203*	*176*
Guinea	IF	U	1,095.3	1.0	..	231.1	327.1	*17.5*	*21.5*	*16.9*	..	..
Guinea-Bissau	P	D	583.7	..	..	..	..	4.6	*51.8*	*2.1*	..	..
Haiti	IF	U	16.7	0.7	..	1.6	5.9	10.7	21.0	4.1	..	*328*
Honduras	MF	D	13.0	1.0	..	1.3	4.4	21.3	32.1	11.0	..	*211*

Relative prices and exchange rates 5.6

	Exchange rate arrangement		Official exchange rate	Ratio of official to parallel exchange rate	Real effective exchange rate	Purchasing power parity conversion factor		Interest rate			Key agricultural producer prices	
			local currency units to $			local currency units to international $					Wheat $ per metric ton	Maize $ per metric ton
	Classification	Structure			1990 = 100			Deposit %	Lending %	Real %		
	1997	1997	1997	1997	1997	1990	1997	1997	1997	1997	1995	1995
Hungary	MF	U	186.8	1.0	132.3	31.1	116.9	18.5	21.8	2.8	*89*	*95*
India	IF	U	36.3	0.9	..	5.6	8.8	..	13.8	7.9	*134*	*104*
Indonesia	IF	U	2,909.4	0.9	..	570.7	893.9	20.0	21.8	8.8	..	168
Iran, Islamic Rep.	MF	D	1,752.9	0.3	..	162.3	800.0	..	..	..	*153*	*138*
Iraq	P	D	0.3	0.0	..	..	..	..	..	..	..	..
Ireland	FL	U	0.7	1.0	94.6	0.7	0.7	0.5	6.6	5.0	*141*	..
Israel	MF	U	3.4	1.0	..	1.7	3.2	13.1	18.7	8.9	..	..
Italy	FL	U	1,703.1	1.0	84.9	1,403.5	1,671.3	4.8	9.7	6.3	*196*	*189*
Jamaica	IF	U	35.4	0.9	..	4.1	25.1	13.9	36.3	22.5	..	*383*
Japan	IF	U	121.0	1.0	111.4	186.1	167.0	0.3	2.4	1.3	..	..
Jordan	P	U	0.7	1.0	..	0.3	0.3	9.1	12.3	9.3	*212*	*137*
Kazakhstan	MF	U	75.4	0.9	..	0.0	29.7	..	..	..	..	..
Kenya	MF	U	58.7	0.9	..	7.7	17.7	16.7	30.2	16.7	*97*	*140*
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	IF	U	951.3	1.0	..	535.8	673.7	10.8	11.9	9.3	..	569
Kuwait	P	U	0.3	1.0	..	0.3	0.3	5.9	8.8	2.0	..	..
Kyrgyz Republic	MF	U	17.4	..	..	0.0	2.9	39.6	49.4	25.2	..	..
Lao PDR	MF	D	1,256.7	1.0	..	174.6	348.7	*16.0*	*27.0*	*12.6*	..	..
Latvia	MF	U	0.6	0.9	..	0.0	0.3	5.9	15.2	8.2	*73*	..
Lebanon	IF	U	1,539.4	1.0	..	185.5	936.0	13.4	20.3	10.9	..	..
Lesotho	P	U	4.6	1.0	102.7	0.8	1.2	11.8	18.0	7.7	..	*177*
Libya	P	U	0.4	0.2	..	..	..	..	..	..	..	..
Lithuania	P	U	4.0	0.9	..	0.0	2.4	7.9	14.4	–0.4	..	..
Macedonia, FYR	MF	U	50.0	0.8	..	..	25.9	..	..	..	..	..
Madagascar	IF	U	5,090.9	0.9	..	423.0	1,376.9	14.4	30.0	21.0	..	..
Malawi	MF	U	16.4	0.9	91.8	1.0	5.7	10.2	28.3	13.1	85	47
Malaysia	MF	U	2.8	1.0	104.5	1.3	1.6	7.8	9.5	6.5	..	..
Mali	P	U	583.7	..	..	129.5	192.1	..	..	..	..	..
Mauritania	MF	U	151.9	1.0	..	29.4	39.1	..	..	..	..	..
Mauritius	MF	U	20.6	1.0	..	6.0	8.0	9.1	18.9	12.3	..	*283*
Mexico	IF	U	7.9	1.0	..	1.3	4.0	14.7	24.5	4.7	*181*	*194*
Moldova	IF	U	4.6	..	..	..	1.3	23.5	33.3	19.5	..	..
Mongolia	IF	U	790.0	1.0	..	2.9	205.4	37.9	74.8	41.2	..	..
Morocco	P	U	9.5	1.0	114.1	3.1	3.5	..	..	..	*274*	*246*
Mozambique	IF	U	11,543.6	0.9	..	251.4	2,578.7	..	..	..	..	..
Myanmar	P	D	6.2	0.0	..	..	..	12.5	16.5	–4.5	..	..
Namibia	P	U	4.6	1.0	..	1.2	1.9	12.7	20.2	10.9	*199*	*197*
Nepal	P	U	58.0	0.9	..	7.0	11.6	..	14.5	5.6	..	..
Netherlands	FL	U	2.0	1.0	99.5	2.1	2.1	3.2	6.1	3.0	..	..
New Zealand	IF	U	1.5	1.0	110.0	1.6	1.5	7.3	11.3	9.6	..	..
Nicaragua	MF	U	9.4	1.0	81.9	0.0	2.1	12.4	21.0	*30.0*	..	*216*
Niger	P	U	583.7	..	..	104.6	130.6	..	..	..	..	..
Nigeria	MF	D	21.9	0.3	171.3	3.5	30.0	7.3	20.4	9.3	*580*	*254*
Norway	MF	U	7.1	1.0	94.5	10.2	10.1	3.6	6.0	3.4	*394*	..
Oman	P	U	0.4	1.0	..	0.3	0.2	7.3	9.3	*5.5*	..	..
Pakistan	MF	U	41.1	0.9	..	6.5	12.0	..	..	..	126	..
Panama	P	U	1.0	..	..	0.4	0.4	7.0	10.6	*8.8*	..	*257*
Papua New Guinea	IF	U	1.4	1.0	93.6	..	..	7.3	10.4	7.9	..	..
Paraguay	IF	U	2,191.0	0.9	124.1	467.7	1,101.7	13.0	27.0	17.6	*119*	*145*
Peru	IF	U	2.7	1.0	..	0.1	1.5	15.0	30.0	19.9	280	204
Philippines	IF	U	29.5	0.9	128.8	6.0	9.4	10.2	16.3	9.6	..	*194*
Poland	MF	U	3.3	1.0	216.2	0.3	1.8	19.4	25.0	8.9	153	..
Portugal	FL	U	175.3	1.0	113.3	94.3	126.2	4.6	9.1	6.1	*187*	*179*
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	MF	U	7,167.9	0.9	..	8.9	2,572.0	..	..	..	*127*	*86*
Russian Federation	MF	U	5.8	0.0	..	0.0	4.0	16.8	32.0	13.3	..	..

5.6 Relative prices and exchange rates

	Exchange rate arrangement		Official exchange rate	Ratio of official to parallel exchange rate	Real effective exchange rate	Purchasing power parity conversion factor		Interest rate			Key agricultural producer prices	
	Classification 1997	Structure 1997	local currency units to $ 1997	1997	1990 = 100 1997	local currency units to international $ 1990	1997	Deposit % 1997	Lending % 1997	Real % 1997	Wheat $ per metric ton 1995	Maize $ per metric ton 1995
Rwanda	IF	U	301.5	0.8	..	38.8	108.6	9.5	..	..	267	172
Saudi Arabia	FL	U	3.7	1.0	97.7	2.6	2.6	5.8	..	..	..	..
Senegal	P	U	583.7	..	..	141.0	174.1	..	..	..	..	140
Sierra Leone	IF	U	981.5	0.9	122.8	52.3	413.3	9.9	23.9	6.1	..	..
Singapore	MF	U	1.5	1.0	..	1.6	1.6	3.5	6.3	4.8	..	..
Slovak Republic	P	U	33.6	1.0	..	7.4	15.4	13.4	18.7	11.3	109	125
Slovenia	MF	U	159.7	0.9	..	..	124.0	13.2	20.0	9.4	*194*	*144*
South Africa	IF	U	4.6	1.0	96.6	1.2	2.0	15.4	20.0	11.3	217	164
Spain	FL	U	146.4	1.0	84.6	104.7	124.4	4.0	6.1	3.6	227	222
Sri Lanka	MF	U	59.0	1.0	..	11.4	19.3	14.2	12.0	2.8	..	180
Sudan	MF	U	1,575.7	..	..	6.9	371.5	..	..	..	*209*	..
Sweden	IF	U	7.6	1.0	86.8	9.4	9.9	2.5	7.0	5.1	*142*	..
Switzerland	IF	U	1.5	1.0	100.3	2.1	2.1	1.0	4.5	4.8	880	520
Syrian Arab Republic	P	M	11.2	0.2	..	10.0	15.3	..	..	..	..	..
Tajikistan	MF	U	..	..	..	0.0	94.8	..	..	..	..	..
Tanzania	IF	U	612.1	0.9	..	53.6	234.1	7.8	29.2	7.8	..	..
Thailand	MF	U	31.4	1.0	..	9.9	11.9	10.5	13.6	7.8	..	142
Togo	P	U	583.7	..	75.8	90.4	133.1	..	..	..	..	*112*
Trinidad and Tobago	IF	U	6.3	1.0	84.4	3.2	4.1	6.9	15.3	10.7	..	*371*
Tunisia	MF	U	1.1	1.0	..	0.3	0.4	..	..	..	291	..
Turkey	MF	U	151,865.0	1.0	..	1,514.7	71,288.1	79.5	..	..	169	196
Turkmenistan	MF	D	*404.4*	..	..	0.0	1,473.0	..	..	..	..	..
Uganda	IF	U	1,083.0	0.9	94.1	109.6	294.8	11.8	21.4	13.8	..	..
Ukraine	MF	D	1.9	0.9	..	0.0	0.8	18.2	49.1	27.2	..	..
United Arab Emirates	FL	U	3.7	1.0	..	3.2	3.4	..	..	..	..	..
United Kingdom	IF	U	0.6	..	102.5	0.6	0.6	3.6	6.6	4.2	*186*	..
United States	IF	U	1.0	..	106.5	1.0	1.0	..	8.4	6.7	*127*	*89*
Uruguay	MF	U	9.4	1.0	168.4	0.5	6.3	19.6	71.6	45.7	153	154
Uzbekistan	MF	M	..	..	..	..	9.7	..	..	..	..	..
Venezuela	MF	U	488.6	..	154.5	16.0	211.8	14.7	19.1	–14.1	..	222
Vietnam	MF	U	11,359.4	1.0	..	*486.1*	2,359.3	9.9	15.2	9.6	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	IF	U	129.3	0.9	..	14.3	57.2	..	..	..	367	416
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	IF	U	1,333.8	0.8	117.0	15.9	567.4	34.5	46.7	16.9	..	..
Zimbabwe	IF	U	12.1	0.9	..	1.1	3.9	18.6	32.5	9.5	*224*	*139*

Note: Exchange rate arrangements are given for the end of the year in 1997. Exchange rate classifications: FL = flexibility limited, IF = independent floating, MF = managed floating, P = pegged. Exchange rate structures: D = dual exchange rates, M = multiple exchange rates, U = unitary rate.

Relative prices and exchange rates 5.6

About the data

In a market-based economy the choices households, producers, and governments make about the allocation of resources are influenced by relative prices—the real exchange rate, real wages, real interest rates, and commodity prices. Relative prices also reflect, to a large extent, the choices of these agents. Thus relative prices convey vital information about the interaction of economic agents in an economy and with the rest of the world.

The exchange rate is the price of one currency in terms of another. Official exchange rates and exchange rate arrangements are established by governments. Parallel, or "black market," exchange rates reflect unofficial rates negotiated by traders and are by their nature difficult to measure. Parallel exchange rate markets often account for only a small share of transactions and so may be both thin and volatile. But in countries with weak policies and financial systems they often represent the "going" rate. The parallel rates reported here are collected by Currency Data & Intelligence from a variety of sources, some within the country and some outside but doing business with entities based in the country.

Real effective exchange rates are derived by deflating a trade-weighted average of the nominal exchange rates that apply between trading partners. For most industrial countries the weights are based on trade in manufactured goods with other industrial countries during 1989–91, and an index of relative, normalized unit labor costs is used as the deflator. (Normalization smooths a time series by removing short-term fluctuations while retaining changes of a large amplitude over the longer economic cycle.) For other countries, prior to 1990, the weights take into account trade in manufactured and primary products during 1980–82; from January 1990 onward weights are based on trade in manufactured and primary products during 1988–90, and an index of relative changes in consumer prices is used as the deflator. An increase in the real effective exchange rate represents an appreciation of the local currency. Because of conceptual and data limitations, changes in real effective exchange rates should be interpreted with caution.

The official or market exchange rate is often used to compare prices in different currencies, but because market imperfections are extensive and exchange rates reflect at best the relative prices of tradables, the volume of goods and services that a U.S. dollar buys in the United States may not correspond to what a U.S. dollar converted to another country's currency at the official exchange rate would buy in that country. The alternative approach is to convert national currency estimates of GNP to a common currency by using conversion factors that reflect equivalent purchasing power. Purchasing power parity (PPP) conversion factors are based on price and expenditure surveys conducted by the International Comparison Programme (ICP) and represent the conversion factors applied to equalize price levels across countries. See *About the data* for tables 4.11 and 4.12 for further discussion of the PPP conversion factor.

Many interest rates coexist in an economy, reflecting competitive conditions, the terms governing loans and deposits, and differences in the position and status of creditors and debtors. In some economies interest rates are set by regulation or administrative fiat. In economies with imperfect markets or where reported nominal rates are not indicative of effective rates, it may be difficult to obtain data on interest rates that reflect actual market transactions. Deposit and lending rates are collected by the International Monetary Fund (IMF) as representative interest rates offered by banks to resident customers. The terms and conditions attached to these rates differ by country, however, limiting their comparability. Real interest rates are calculated by adjusting nominal rates by an estimate of the inflation rate in the economy. A negative real interest rate indicates a loss in the purchasing power of the principal. The real interest rates in the table are calculated as $(i - P)/(1 + P)$, where i is the nominal interest rate and P is the inflation rate (as measured by the GDP deflator).

The table also shows prices for two key agricultural commodities, wheat and maize. Prices received by farmers, as used here, are important determinants of the type and volume of agricultural production. In theory these prices should refer to national average farm-gate, or first-point-of-sale, transactions. But depending on the country's institutional arrangements—that is, whether it relies on market wholesale prices, government-fixed prices, or support prices—the data might not always refer to the same selling points. These data come from the Food and Agriculture Organization (FAO), and most originated from official country publications or from FAO questionnaires. As the data show, prices received by farmers often are not equalized across international markets (even after adjusting for freight, transport, and insurance costs and differences in quality). Market imperfections such as taxes, subsidies, and trade barriers drive a wedge between domestic and international prices.

Definitions

- **Exchange rate arrangement** describes the arrangement that an IMF member country has furnished to the IMF under article IV, section 2(a) of the IMF's Articles of Agreement. *Exchange rate classification* indicates how the exchange rate is determined in the main market when there is more than one market: pegged (to a single currency or composite of currencies), flexibility limited, or floating (managed or independent). *Exchange rate structure* shows whether countries have unitary, dual, or multiple exchange rates. • **Official exchange rate** refers to the actual, principal exchange rate and is an annual average based on monthly averages (local currency units relative to the U.S. dollar) determined by country authorities or on rates determined largely by market forces in the legally sanctioned exchange market. • **Ratio of official to parallel exchange rate** measures the premium people must pay, relative to the official exchange rate, to exchange the domestic currency for dollars in the black market. • **Real effective exchange rate** is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.
- **Purchasing power parity conversion factor** is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as $1 would buy in the United States.
- **Deposit interest rate** is the rate paid by commercial or similar banks for demand, time, or savings deposits.
- **Lending interest rate** is the rate charged by banks on loans to prime customers. • **Real interest rate** is the lending interest rate adjusted for inflation as measured by the GDP deflator. • **Key agricultural producer prices** are domestic producer prices converted to U.S. dollars using the official exchange rate.

Data sources

Information on exchange rate arrangements is from the IMF's *Exchange Arrangements and Exchange Restrictions Annual Report, 1998.* Official and real effective exchange rates and deposit and lending rates are from the IMF's *International Financial Statistics.* Estimates of parallel market exchange rates are from Currency Data & Intelligence's *Global Currency Report.* PPP conversion factors are from the ICP and World Bank staff estimates. Real interest rates are calculated using World Bank data on the GDP deflator. Agricultural price data are from the FAO's *Production Yearbook.*

5.7 Defense expenditures and trade in arms

	Military expenditures				Armed forces personnel				Arms trade			
	% of GNP		% of central government expenditure		Total thousands		% of labor force		Exports % of total exports		Imports % of total imports	
	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995
Albania	5.3	1.1	10.9	3.2	0	52	*0.0*	3.3	0.0	0.0	0.0	0.0
Algeria	2.5	3.2	6.3	6.9	170	120	2.9	1.4	0.0	0.0	5.1	2.2
Angola	*19.9*	3.0	..	..	66	82	1.7	1.6	0.0	*0.0*	118.0	*13.7*
Argentina	3.8	1.7	12.4	*27.0*	129	65	1.1	0.5	1.0	0.3	5.5	0.2
Armenia	..	0.9	..	..	..	60	..	3.3	..	0.0	..	4.5
Australia	2.7	2.5	9.4	8.8	70	58	0.9	0.6	0.6	0.1	3.6	1.5
Austria	1.3	0.9	3.3	*2.2*	40	45	1.2	1.2	0.9	*0.1*	0.1	*0.1*
Azerbaijan	..	2.8	..	..	..	87	..	2.7	..	0.0	..	0.0
Bangladesh	1.7	1.7	13.0	*9.9*	91	115	0.2	0.2	0.0	0.0	2.2	0.9
Belarus	..	0.8	..	..	..	115	..	2.1	..	4.0	..	0.0
Belgium	3.1	1.7	5.3	*3.5*	107	47	2.7	1.1	0.7	0.1	0.7	0.2
Benin	*2.2*	1.2	..	*8.6*	6	6	0.3	0.2	0.0	0.0	3.0	0.0
Bolivia	*3.3*	2.3	*22.6*	9.5	28	28	1.2	0.9	0.0	0.0	0.7	0.7
Bosnia and Herzegovina	..	..	..	..	..	50	..	4.2	..	*0.0*	..	*20.0*
Botswana	2.5	5.3	5.8	12.7	3	8	0.6	1.2	0.0	0.0	1.7	0.0
Brazil	0.8	1.7	2.1	3.9	496	285	0.9	0.4	1.3	0.0	0.4	0.3
Bulgaria	14.1	2.8	32.5	6.3	189	86	4.1	2.0	4.7	2.8	7.3	0.0
Burkina Faso	1.9	2.9	18.7	*12.0*	9	9	0.2	0.2	0.0	0.0	6.0	0.0
Burundi	3.0	4.4	20.8	24.8	9	22	0.4	0.7	0.0	0.0	2.6	0.0
Cambodia	..	3.1	..	..	35	90	0.9	1.7	0.0	0.0	..	3.2
Cameroon	1.9	*1.9*	8.3	*10.2*	15	22	0.4	0.4	0.0	0.0	1.7	0.8
Canada	2.2	1.7	8.6	*7.1*	83	70	0.6	0.4	0.6	0.1	0.1	0.1
Central African Republic	*1.8*	*2.5*	*6.4*	..	5	5	..	..	0.0	0.0	0.0	0.0
Chad	2.0	3.1	6.1	..	16	30	0.6	0.9	0.0	0.0	12.0	4.5
Chile	4.0	3.8	11.4	17.5	124	102	2.9	1.8	2.1	0.0	0.7	2.4
China	4.9	2.3	23.8	18.5	4,100	2,930	0.7	0.4	..	..	..	..
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	1.6	2.6	10.3	16.2	66	146	0.6	0.9	0.0	0.0	0.5	0.4
Congo, Dem. Rep.	1.2	0.3	9.8	3.7	62	49	0.5	0.3	0.0	0.0	5.0	0.0
Congo, Rep.	4.0	2.9	9.2	..	15	10	1.9	1.0	0.0	0.0	6.7	1.5
Costa Rica	0.7	0.6	2.8	2.7	8	8	0.8	0.6	0.0	0.0	1.8	0.0
Côte d'Ivoire	..	..	..	..	..	..	..	..	..	..	..	..
Croatia	..	10.5	..	32.0	..	60	..	2.7	..	0.0	..	1.5
Cuba	4.5	1.6	..	..	297	70	7.0	1.3	0.1	0.0	27.4	0.0
Czech Republic	..	2.3	..	6.6	..	68	..	1.2	..	0.6	..	0.0
Denmark	2.3	1.8	5.2	4.1	29	27	1.0	0.9	0.1	0.0	0.6	0.2
Dominican Republic	1.2	1.4	8.0	9.1	22	22	0.9	0.7	0.0	0.0	0.7	0.3
Ecuador	2.8	3.7	16.9	18.3	43	58	1.4	1.4	0.0	0.0	4.0	6.2
Egypt, Arab Rep.	12.8	5.7	22.1	13.7	466	430	2.9	2.1	4.9	0.0	30.9	16.2
El Salvador	5.7	1.1	29.1	7.4	48	22	2.8	0.9	0.0	0.0	12.5	0.7
Eritrea	..	..	..	..	..	..	..	..	..	0.0	..	0.0
Estonia	..	1.1	..	*2.9*	..	6	..	0.7	..	0.0	..	0.2
Ethiopia	6.7	2.2	28.9	*9.2*	240	120	1.2	0.5	0.0	0.0	80.6	*0.0*
Finland	1.7	2.0	5.4	5.1	40	32	1.6	1.2	0.0	0.0	0.8	0.1
France	4.0	3.1	8.8	6.6	563	504	2.3	1.9	7.0	0.8	0.1	0.1
Gabon	2.8	2.6	6.6	*9.6*	7	10	1.7	1.9	0.0	0.0	11.7	0.0
Gambia, The	..	4.6	..	16.2	1	1	0.3	0.2	0.0	0.0	10.8	0.0
Georgia	..	2.4	..	..	..	5	..	0.2	..	0.0	..	4.0
Germany[a]	..	..	..	..	..	..	..	..	..	0.2	..	0.1
Ghana	1.0	1.4	7.2	*5.8*	15	7	0.3	0.1	0.0	*0.0*	0.0	*0.0*
Greece	7.0	5.5	13.8	10.8	201	213	5.1	4.8	0.7	*0.1*	2.9	*2.2*
Guatemala	1.6	1.3	17.0	14.2	43	36	1.6	1.0	0.0	0.0	2.6	0.2
Guinea	..	1.5	..	..	28	12	1.1	0.4	*0.0*	*0.0*	*20.8*	*0.0*
Guinea-Bissau	2.9	2.8	4.7	..	11	7	2.6	1.4	0.0	0.0	*41.0*	0.0
Haiti	1.5	2.9	7.5	21.6	6	0	0.2	0.0	0.0	0.0	2.3	0.0
Honduras	3.5	1.4	14.0	8.7	21	18	1.5	0.9	0.0	0.0	3.4	0.8

Defense expenditures and trade in arms 5.7

	Military expenditures				Armed forces personnel				Arms trade			
	% of GNP		% of central government expenditure		Total thousands		% of labor force		Exports % of total exports		Imports % of total imports	
	1985	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**
Hungary	7.2	1.5	15.3	4.6	117	71	2.4	1.5	2.6	0.2	1.0	0.2
India	3.5	2.4	15.7	12.7	1,260	1,265	0.4	0.3	0.1	0.0	16.3	1.2
Indonesia	2.4	1.8	10.3	8.9	278	280	0.4	0.3	0.0	0.0	1.6	0.4
Iran, Islamic Rep.	7.7	2.6	34.1	*13.6*	345	440	2.5	2.5	0.0	1.6	17.2	2.2
Iraq	41.2	..	..	..	788	390	19.8	7.0	0.2	0.0	46.4	0.0
Ireland	1.7	1.3	2.9	3.4	14	13	1.1	0.9	0.0	0.0	0.1	0.0
Israel	20.3	9.6	27.2	21.1	195	185	12.1	7.9	10.8	4.1	10.9	1.1
Italy	2.2	1.8	4.6	*3.9*	504	435	2.2	1.7	1.7	0.1	0.3	0.1
Jamaica	0.9	0.8	1.8	1.4	2	3	0.2	0.2	0.0	0.0	0.9	0.0
Japan	1.0	1.0	5.6	*4.2*	241	240	0.4	0.4	0.1	0.0	0.8	0.2
Jordan	15.5	7.7	39.7	21.7	81	112	12.3	9.5	0.0	0.0	22.9	1.9
Kazakhstan	..	0.9	..	..	..	28	..	0.4	..	0.4	..	7.2
Kenya	2.3	2.3	8.4	6.2	19	22	0.2	0.2	0.0	0.0	0.7	0.3
Korea, Dem. Rep.	20.0	28.6	..	..	784	1,040	8.8	8.8	25.4	3.6	22.1	5.8
Korea, Rep.	5.0	3.4	26.6	13.6	600	655	3.4	3.0	0.6	0.0	1.5	0.8
Kuwait	5.7	11.6	13.6	25.5	16	20	2.4	3.4	0.0	0.0	6.2	11.6
Kyrgyz Republic	..	*0.7*	..	..	..	13	..	0.7	..	2.5	..	0.0
Lao PDR	7.4	4.2	..	*22.3*	54	50	..	..	*0.0*	0.0	*48.8*	0.0
Latvia	..	0.9	..	..	..	7	..	0.5	..	0.0	..	0.3
Lebanon	..	3.7	..	*9.7*	21	55	2.1	4.2	0.0	0.0	2.3	0.5
Lesotho	*5.3*	1.9	..	2.5	2	2	0.3	0.3	0.0	0.0	0.0	0.0
Libya	*12.0*	6.0	..	..	91	76	8.0	5.3	0.8	*0.0*	39.0	0.0
Lithuania	..	0.5	..	2.1	..	12	..	0.6	..	0.0	..	0.2
Macedonia, FYR	..	3.3	..	..	..	16	..	1.8	..	0.0	..	0.0
Madagascar	1.9	0.9	8.0	5.0	27	21	0.6	0.3	0.0	0.0	7.5	1.0
Malawi	2.0	1.6	5.8	*3.5*	6	10	0.2	0.2	0.0	*0.0*	1.8	*0.0*
Malaysia	3.8	3.0	10.7	12.4	110	122	1.8	1.5	0.0	0.1	3.8	1.0
Mali	2.9	1.8	8.1	..	8	8	0.2	0.2	0.0	*0.0*	3.3	*0.0*
Mauritania	6.9	3.2	25.0	*9.3*	16	10	1.9	0.9	0.0	*0.0*	0.0	*0.0*
Mauritius	0.2	0.4	0.8	1.6	1	1	0.3	0.2	0.0	0.0	0.0	0.0
Mexico	0.7	1.0	2.6	5.1	140	175	0.5	0.5	0.0	0.0	0.2	0.0
Moldova	..	2.1	..	..	..	12	..	0.6	..	5.6	..	0.0
Mongolia	8.3	2.4	*13.1*	7.0	38	21	4.3	1.8	0.0	0.0	0.5	*0.0*
Morocco	*6.0*	4.3	*20.0*	*13.8*	165	195	2.1	1.9	..	..	..	..
Mozambique	9.9	5.4	38.0	..	35	12	0.5	0.1	0.0	0.0	63.7	0.0
Myanmar	..	..	..	..	..	..	..	..	..	..	..	..
Namibia	..	2.1	..	*5.5*	..	8	..	1.3	..	*0.0*	..	*0.8*
Nepal	1.1	0.9	6.2	5.8	25	40	0.3	0.4	0.0	0.0	1.1	0.0
Netherlands	3.0	2.1	5.4	4.4	103	67	1.7	0.9	0.2	0.1	0.8	0.1
New Zealand	2.0	1.3	4.5	3.3	13	10	0.9	0.6	0.0	0.0	1.3	0.3
Nicaragua	17.4	2.2	26.2	5.3	74	14	6.2	0.8	0.0	7.7	29.0	0.0
Niger	0.8	1.2	5.0	*7.9*	5	9	0.2	0.2	0.0	*0.0*	0.0	*0.0*
Nigeria	1.5	*0.8*	9.4	*3.5*	134	89	0.4	0.2	0.0	0.0	3.8	0.0
Norway	3.1	2.7	7.5	*6.5*	36	38	1.8	1.7	0.2	0.0	1.2	0.4
Oman	24.4	16.7	42.3	33.9	25	36	6.2	6.2	0.0	..	4.4	10.8
Pakistan	6.2	6.1	28.1	25.3	483	587	1.4	1.3	1.5	0.3	8.0	4.2
Panama	2.0	1.4	6.4	*5.3*	12	12	1.5	1.1	0.0	0.0	0.7	0.0
Papua New Guinea	1.5	1.4	4.5	5.6	3	5	0.2	0.2	0.0	0.0	1.0	0.0
Paraguay	1.1	1.4	11.9	7.3	14	12	1.0	0.7	0.0	0.0	4.0	0.0
Peru	6.7	1.7	36.3	9.3	128	115	2.0	1.4	0.0	0.0	3.8	3.0
Philippines	1.4	1.5	9.5	8.5	115	110	0.5	0.4	0.2	0.0	0.7	0.3
Poland	10.2	2.3	40.7	5.4	439	278	2.3	1.4	11.3	0.2	4.2	0.3
Portugal	2.9	2.6	6.5	*5.9*	102	78	2.1	1.6	3.7	0.0	3.1	0.3
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..
Romania	6.9	2.5	20.0	11.2	237	209	2.2	2.0	3.6	0.3	0.4	0.0
Russian Federation	..	11.4	..	*38.1*	..	1,400	..	1.8	..	4.3	..	0.0

5.7 Defense expenditures and trade in arms

	Military expenditures				Armed forces personnel				Arms trade			
	% of GNP		% of central government expenditure		Total thousands		% of labor force		Exports % of total exports		Imports % of total imports	
	1985	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**	**1985**	**1995**
Rwanda	1.7	5.2	9.4	*23.3*	5	33	0.2	1.0	0.0	0.0	0.0	0.0
Saudi Arabia	22.7	13.5	27.0	*41.0*	80	175	2.0	2.8	0.0	*0.0*	30.1	31.3
Senegal	2.8	1.6	8.8	..	18	14	0.6	0.4	0.0	0.0	0.6	0.4
Sierra Leone	0.8	6.1	5.0	28.9	4	14	0.3	0.8	0.0	0.0	0.0	0.0
Singapore	5.9	4.7	17.0	24.0	56	60	4.6	3.9	0.2	0.0	0.5	0.2
Slovak Republic	..	3.0	..	6.8	..	52	..	1.8	..	0.8	..	3.1
Slovenia	..	1.5	..	3.5	..	10	..	1.0	..	0.1	..	0.3
South Africa	3.8	2.2	11.6	6.7	95	100	0.8	0.7	0.5	0.4	0.2	0.8
Spain	2.4	1.6	6.9	5.6	314	210	2.1	1.2	2.4	0.1	0.6	0.6
Sri Lanka	2.9	4.6	8.4	15.7	22	110	0.4	1.4	0.0	0.0	1.6	3.1
Sudan	3.2	*6.6*	..	*37.6*	65	89	0.8	0.9	0.0	0.0	7.8	8.4
Sweden	3.0	2.8	6.1	5.8	69	51	1.6	1.1	0.6	0.4	0.3	0.0
Switzerland	2.4	1.6	..	*6.0*	23	29	0.7	0.8	1.2	0.1	2.4	0.0
Syrian Arab Republic	21.8	7.2	42.0	..	402	320	13.8	7.6	0.0	0.0	37.8	1.5
Tajikistan	..	3.7	..	..	..	8	..	0.4	..	1.4	..	0.0
Tanzania	3.8	1.8	12.8	8.4	43	35	0.4	0.2	0.0	0.0	3.8	0.0
Thailand	4.2	2.5	19.7	15.2	235	288	0.8	0.8	0.0	0.0	2.1	1.6
Togo	2.6	2.3	6.9	10.2	7	12	0.5	0.7	0.0	0.0	0.0	0.0
Trinidad and Tobago	..	1.7	..	*4.0*	2	3	0.4	0.6	0.0	0.0	0.0	0.0
Tunisia	3.6	2.0	8.8	*6.3*	38	35	1.5	1.1	0.0	0.0	11.2	0.5
Turkey	4.6	4.0	17.9	17.6	814	805	3.8	2.8	1.5	0.3	4.4	2.0
Turkmenistan	..	1.7	..	..	..	21	..	1.1	..	0.0	..	4.2
Uganda	2.0	2.3	15.6	13.3	15	52	0.2	0.5	0.0	0.0	3.1	0.0
Ukraine	..	2.9	..	7.8	..	476	..	1.8	..	1.4	..	0.0
United Arab Emirates	6.7	4.8	43.5	38.4	44	60	6.1	5.1	0.0	*0.0*	3.4	*1.8*
United Kingdom	5.1	3.0	12.6	7.2	334	233	1.2	0.8	1.6	2.1	0.7	0.1
United States	6.1	3.8	25.7	17.4	2,244	1,620	1.9	1.2	6.3	2.7	0.5	0.1
Uruguay	2.9	2.4	10.6	7.3	30	25	2.4	1.7	0.0	0.0	0.0	0.2
Uzbekistan	..	3.8	..	..	..	21	..	0.2	..	0.3	..	0.0
Venezuela	2.1	1.1	9.2	6.3	71	75	1.2	0.9	0.0	0.0	6.5	0.8
Vietnam	*19.4*	2.6	*102.1*	10.9	1,027	550	3.6	1.5	2.7	0.0	94.3	2.7
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	*15.7*	..	*29.4*	..	68	..	1.4	..	*0.0*	..	*13.9*
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..
Zambia	..	2.8	..	12.6	16	22	0.6	0.6	0.0	0.0	4.6	*0.6*
Zimbabwe	5.7	4.0	14.4	*10.5*	46	40	1.2	0.8	0.0	0.0	0.0	0.0
World[b]	**5.2 w**	**2.8 w**	**18.1 w**	**9.9 w**	**28,070 t**	**22,790 t**	..	..	**2.7 w**	**0.7 w**	**2.7 w**	**0.7 w**

Note: Data for some countries are based on partial or uncertain data or rough estimates; see ACDA 1997.

a. Data prior to 1990 refer to the Federal Republic of Germany before unification. b. U.S. Arms Control and Disarmament Agency aggregates.

Defense expenditures and trade in arms 5.7

About the data

Although national defense is an important function of government and security from external threats contributes to economic development, high levels of defense spending burden the economy and may impede growth. Comparisons of defense spending between countries should take into account the many factors that influence perceptions of vulnerability and risk, including historical and cultural traditions, the length of borders that need defending, the quality of relations with neighbors, and the role of the armed forces in the body politic.

Although the traditional secrecy shrouding data on defense spending and trade in arms is gradually lifting, data from governments are often incomplete and unreliable. Even in countries where parliaments vigilantly review government budgets and spending, defense spending and trade in arms often do not receive close scrutiny. Finance ministries also may not exercise due oversight, particularly in countries where the armed forces have a strong political voice. For a detailed critique of the quality of such data see Ball (1984) and Happe and Wakeman-Linn (1994).

The International Monetary Fund's (IMF) *Government Finance Statistics* is the primary source of data on defense spending. It uses a consistent definition of defense spending based on the United Nations' classification of the functions of government and the North Atlantic Treaty Organization (NATO) definition. The IMF checks data on defense spending for broad consistency with other macroeconomic data reported to it but is not always able to verify the accuracy and completeness of such data. Moreover, country coverage is affected by delays or failure to report data. Thus most researchers supplement the IMF's data with independent assessments by organizations such as the U.S. Arms Control and Disarmament Agency (ACDA), the Stockholm International Peace Research Institute (SIPRI), and the International Institute for Strategic Studies (IISS). However, these agencies rely heavily on reporting by governments, on confidential intelligence estimates of varying quality, on sources that they do not or cannot reveal, and on one another's publications. Data in this table are from the ACDA.

Definitions of military spending differ depending on whether they include civil defense, reserves and auxiliary forces, police and paramilitary forces, dual-purpose forces such as military and civilian police, military grants in kind, pensions for military personnel, and social security contributions paid by one part of government to another. Official government data may omit parts of military spending, disguise financing through extrabudgetary accounts or unrecorded use of foreign exchange receipts, or fail to include military assistance or secret military equipment imports. Current spending is more likely to be reported than capital spending. In some cases a more accurate estimate of military spending can be obtained by adding the value of estimated arms imports and nominal military expenditures. This method may understate or overstate spending in a particular year, however, because payments for arms may not coincide with deliveries.

Data on armed forces refer to active-duty military personnel, including paramilitary forces. These data exclude payments to civilians from the defense budget and so are not consistent with the data on military spending. Moreover, because they exclude payments to personnel not on active duty, they underestimate the share of the labor force that works for the defense establishment. Because governments rarely report the size of their armed forces, such data typically come from intelligence sources. The ACDA attributes its data to unspecified U.S. government sources.

The Standard International Trade Classification does not clearly distinguish trade in military goods. For this and other reasons, customs-based data on trade in arms are of little use, so most compilers rely on trade publications, confidential government information on third-country trade, and other sources. The construction of defense production facilities and licensing fees paid for the production of arms are included in trade data when they are specified in military transfer agreements. Grants in kind are usually included as well. Definitional issues include treatment of dual-use equipment such as aircraft, use of military establishments such as schools and hospitals by civilians, and purchases by nongovernment buyers. ACDA data do not include arms supplied to subnational groups. Valuation problems arise when data are reported in volume terms and the purchase price must be estimated. Differences between sources may reflect reporting lags or differences in the period covered. Most compilers revise their time-series data regularly, so estimates for the same year may not be consistent between publication dates.

For more information see the ACDA's *World Military Expenditures and Arms Transfers 1996* (1997).

Definitions

- **Military expenditures** for NATO countries are based on the NATO definition, which covers military-related expenditures of the defense ministry (including recruiting, training, construction, and the purchase of military supplies and equipment) and other ministries. Civilian-type expenditures of the defense ministry are excluded. Military assistance is included in the expenditures of the donor country, and purchases of military equipment on credit are included at the time the debt is incurred, not at the time of payment. Data for other countries generally cover expenditures of the ministry of defense (excluded are expenditures on public order and safety, which are classified separately). • **Armed forces personnel** refers to active-duty military personnel, including paramilitary forces if those forces resemble regular units in their organization, equipment, training, or mission. • **Arms trade** is exports and imports of military equipment usually referred to as "conventional," including weapons of war, parts thereof, ammunition, support equipment, and other commodities designed for military use. See *About the data* for more details.

Data sources

World
Military
Expenditures and
Arms
Transfers
1996

Data on military expenditures, armed forces, and arms trade are from the ACDA's *World Military Expenditures and Arms Transfers 1996* (1997).

5.8 State-owned enterprises

	Economic activity		Investment		Credit		Net financial flows from government		Overall balance before transfers		Employment		Proceeds from privatization
	% of GDP		% of gross domestic investment		% of gross domestic credit		% of GDP		% of GDP		% of total		$ millions
	1985–90	**1990–96**	**1985–90**	**1990–96**	**1985–90**	**1990–96**	**1985–90**	**1990–96**	**1985–90**	**1990–96**	**1985–90**	**1990–96**	**1990–97**
Albania	..	..	..	..	..	..	..	..	..	..	..	..	27.6
Algeria	..	..	..	..	..	38.5	..	..	..	..	7.2 [a]	..	9.3
Angola	..	..	..	..	..	..	..	..	..	..	..	..	3.8
Argentina	2.7	1.3	9.4	3.0	..	..	2.8	..	–0.6	–0.1	2.6	..	27,921.0
Armenia	..	..	..	..	..	..	..	..	..	..	..	..	182.1
Australia	..	..	15.0 [b]	12.9 [b]	..	..	..	..	..	..	..	..	..
Austria	..	..	..	..	..	..	..	..	..	..	..	..	..
Azerbaijan	..	..	..	..	..	65.4	..	..	..	..	..	..	8.6
Bangladesh[c]	3.1	3.4	33.5	23.5	17.4	12.0	..	–0.7	–3.9	–3.6	..	..	59.5
Belarus	..	..	..	..	..	..	..	..	..	..	..	..	10.8
Belgium	2.8 [a]	..	7.8	..	..	0.5	..	..	..	..	..	..	..
Benin	..	..	21.8	..	..	..	..	..	..	..	..	..	39.1
Bolivia	13.9 [a]	13.8	25.9	26.0	12.3	6.1	–7.6 [a]	–8.2	7.9 [a]	7.2	2.3 [a]	..	884.2
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	..	..	..
Botswana	5.6 [a]	5.6 [a]	16.5 [a]	23.2 [a]	9.4	6.0	–0.3 [a]	–0.3 [a]	–2.6 [a]	.. [a]	6.3 [a]	5.8 [a]	..
Brazil	7.6	8.0	13.0	8.6	14.0	4.2	–0.6 [b]	–2.2	0.9 [b]	3.3	..	..	34,301.4
Bulgaria	..	..	..	..	..	38.9	..	..	..	..	..	..	877.7
Burkina Faso	..	..	..	..	..	..	..	..	..	..	..	..	6.4
Burundi	7.3	..	41.1	..	19.3	12.0	2.7	..	..	..	32.1 [b,d]	..	4.2
Cambodia	..	..	..	..	..	1.2	..	..	..	..	..	..	..
Cameroon	18.0	8.5	..	..	13.0	7.5	1.3	..	..	..	..	..	41.1
Canada	..	..	..	..	..	..	..	..	..	..	..	..	..
Central African Republic	4.1	..	..	..	12.5	11.1	..	..	–3.1	..	..	..	..
Chad	..	..	..	..	32.5	15.9	..	..	..	..	..	..	..
Chile	14.4	8.1	15.3	6.1	2.0	1.7	–8.6 [e]	–4.8 [e]	8.7 [e]	4.8 [e]	..	..	903.8
China[f]	..	..	29.2	24.9	..	..	..	..	..	..	7.7	7.4	17,036.0
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	7.0	..	13.5	..	5.2	1.5	–0.6	..	0.8	..	..	..	5,461.4
Congo, Dem. Rep.	..	..	18.8	..	1.0	5.0	..	..	..	..	..	..	..
Congo, Rep.	15.1 [a]	..	..	..	12.8	8.1	..	..	..	..	..	..	..
Costa Rica	8.1	..	8.5	11.0	..	..	–1.9	..	1.9	..	..	..	50.8
Côte d'Ivoire	..	..	21.4 [b]	..	..	..	..	..	..	..	..	..	476.3
Croatia	..	..	..	..	..	4.2	..	..	..	..	..	..	246.3
Cuba	..	..	..	..	..	..	..	..	..	..	..	..	706.0
Czech Republic	..	..	..	..	..	22.4	..	..	..	..	..	..	4,277.4
Denmark	..	..	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic	..	..	11.6 [b]	..	15.0	11.1	..	..	..	..	..	..	..
Ecuador	10.2	..	12.7	13.9	0.3	0.5	0.1	..	–1.2	..	..	..	169.4
Egypt, Arab Rep.	..	..	65.5	..	21.5	18.5	–0.6	..	–2.6	..	13.8	..	1,510.2
El Salvador	1.8 [a]	..	7.1	..	3.2	0.0	0.1 [a]	..	–0.3 [a]	..	..	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..	..	..
Estonia	..	..	..	..	..	23.5	..	..	..	..	..	..	467.3
Ethiopia	..	..	..	..	..	..	..	..	..	..	..	..	..
Finland	..	..	..	..	..	..	..	..	..	..	..	..	..
France	11.2	..	..	..	..	..	..	..	..	..	..	..	..
Gabon	..	..	..	..	5.2	3.3	..	..	..	..	25.1	..	..
Gambia, The	3.8	..	..	..	..	..	2.9 [a]	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..	..
Germany	..	..	..	..	..	..	..	..	..	..	..	..	..
Ghana	8.5	..	18.5	..	12.4	10.0	0.4 [a]	..	0.1	..	34.3 [d]	..	864.8
Greece	11.5	..	20.2	..	..	..	..	..	..	..	..	..	..
Guatemala	1.9	2.1	6.7	5.2	..	..	0.2 [a]	0.1	0.1	0.5	..	..	30.0
Guinea	..	..	..	..	..	0.8	..	..	..	..	..	..	45.0
Guinea-Bissau	..	..	..	..	13.2	8.9	..	..	..	..	..	..	0.5
Haiti	..	..	11.2	..	7.7	3.9	..	..	..	..	..	..	..
Honduras	5.5	..	15.1	..	..	..	0.0	..	–0.9	..	..	..	74.0

State-owned enterprises 5.8

	Economic activity		Investment		Credit		Net financial flows from government		Overall balance before transfers		Employment		Proceeds from privatization
	% of GDP		% of gross domestic investment		% of gross domestic credit		% of GDP		% of GDP		% of total		$ millions
	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1990–97
Hungary	..	..	..	..	..	..	..	..	..	..	..	..	12,293.3
India	13.4	13.4	35.4	32.4	..	..	–0.3[g]	–0.9	–2.5[g]	–1.2[g]	8.5[g]	8.1[g]	7,073.0
Indonesia	14.5	..	8.9	15.7	..	3.4	1.3	..	–0.5	–2.6	0.9	1.2	5,162.8
Iran, Islamic Rep.	..	..	..	..	..	..	..	..	..	..	..	..	..
Iraq	..	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	..	..	..	..	..	..	..	..	..	..	..	..
Israel	..	..	..	..	..	..	..	..	..	..	..	..	..
Italy	..	..	12.9	..	..	..	..	..	..	..	..	..	..
Jamaica	..	..	23.6	..	3.3	1.8	..	..	–1.4	..	..	..	385.4
Japan	..	..	5.8	6.0	2.8	2.0	..	..	..	..	..	..	..
Jordan	..	..	..	..	9.5	7.7	..	..	..	..	..	..	58.7
Kazakhstan	..	..	..	..	..	..	..	..	..	..	..	..	5,797.6
Kenya	11.6	..	20.4	..	5.2	3.2	0.2	..	..	..	7.9	7.7	227.1
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	10.3	..	14.3	..	..	..	–0.2	..	0.7	..	1.9	..	..
Kuwait	..	..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	..	..	..	..	..	..	..	..	..	..	..	..	139.5
Lao PDR	..	..	..	..	..	29.8	..	..	..	..	..	..	32.0
Latvia	..	..	..	..	..	5.3	..	..	..	..	..	..	431.1
Lebanon	..	..	..	..	..	..	..	..	..	..	..	..	..
Lesotho	..	..	..	..	..	..	..	..	..	..	..	..	..
Libya	..	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	..	..	..	..	..	9.9	..	..	..	..	..	..	899.8
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..	601.5
Madagascar	..	..	..	..	..	..	..	..	..	..	..	..	..
Malawi	4.3[a]	..	9.2	..	12.8	10.2	0.8[a]	..	–1.2[a]	..	..	..	10.8
Malaysia[h]	..	..	..	25.9	..	..	..	..	..	–1.9	..	..	10,029.6
Mali	..	..	..	..	..	..	..	..	..	..	..	..	21.9
Mauritania	..	..	19.3	..	..	0.1	..	..	..	..	..	..	1.1
Mauritius	1.9	..	..	..	..	..	–0.3	..	..	..	..	..	..
Mexico[i]	6.7	4.9	14.6	10.5	6.5	0.9	–2.4	–3.1	2.4	3.0	3.5	2.1	30,460.5
Moldova	..	..	..	..	..	38.9	..	..	..	..	..	..	1.6
Mongolia	..	..	..	..	..	32.8	..	..	..	..	..	..	..
Morocco	16.8[b]	..	19.3	..	..	..	0.0[a]	..	..	..	..	..	1,846.7
Mozambique	..	..	..	..	8.9	5.9	..	..	..	..	..	..	109.6
Myanmar	..	..	37.1[b]	..	..	..	..	..	..	..	..	..	..
Namibia	..	..	11.9	..	..	1.3	2.5[a]	..	–1.0	..	..	..	..
Nepal	..	..	50.0	..	7.4	3.0	..	..	..	..	..	..	15.0
Netherlands	..	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	..	..	..	..	..	..	..	..	..	..	..	..	..
Nicaragua	..	..	..	..	43.2	13.1	..	..	..	..	..	..	130.2
Niger	5.1	..	..	..	..	..	..	..	–0.1	..	..	..	..
Nigeria	..	..	..	..	..	0.5	..	..	..	..	..	..	730.2
Norway	..	..	25.8[b]	..	2.0	1.2	..	..	..	..	..	..	..
Oman	..	..	..	..	1.3	0.7	..	..	..	..	..	..	60.1
Pakistan	..	..	28.8	25.9	..	..	..	..	..	..	..	..	1,951.0
Panama	7.6	7.6	9.7	4.7	..	..	–0.8	–2.0	2.1	3.6	..	..	823.8
Papua New Guinea	..	..	7.8	..	..	..	..	..	..	..	..	..	223.6
Paraguay	4.8	4.5	11.2	5.1	16.6	7.9	0.2	–0.4	–2.0	1.2	..	..	42.0
Peru	6.4	5.7	9.7	4.4	..	..	–3.1	–3.1	1.5	3.0	2.5	..	7,477.5
Philippines	2.3	2.2	8.4	9.9	8.5	3.9	..	..	–2.2	–3.7	0.8	..	3,730.0
Poland	..	..	..	..	76.0	29.6	..	..	..	..	..	..	5,845.0
Portugal	15.1	..	16.6	..	12.2	6.4	..	..	..	..	..	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..	..
Romania	..	63.0[j]	..	72.9[j]	..	75.2	..	..	..	..	..	..	766.7
Russian Federation	..	..	..	..	..	20.3	..	..	..	..	..	..	1,001.6

5.8 State-owned enterprises

	Economic activity		Investment		Credit		Net financial flows from government		Overall balance before transfers		Employment		Proceeds from privatization
	% of GDP		% of gross domestic investment		% of gross domestic credit		% of GDP		% of GDP		% of total		$ millions
	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1985–90	1990–96	1990–97
Rwanda	..	..	..	..	..	..	0.4	..	1.0	..	..	..	..
Saudi Arabia	..	..	..	..	..	12.9	..	..	..	..	..	..	..
Senegal	6.9	..	28.2	..	..	..	4.5	..	–1.0	..	20.4[d]	..	191.4
Sierra Leone	..	..	..	..	0.4	0.1	0.1[b]	..	..	..	..	..	1.6
Singapore	..	..	..	..	..	..	..	..	..	..	..	..	..
Slovak Republic	..	..	..	..	..	27.9	..	..	..	..	..	..	1,979.4
Slovenia	..	..	..	..	..	..	..	..	..	..	..	..	521.1
South Africa	14.9	..	16.5	..	..	..	..	..	..	..	..	..	2,481.9
Spain	..	..	..	..	0.1	..	..	..	..	..	..	..	..
Sri Lanka	..	..	26.8	..	..	..	2.8	1.4	..	..	..	12.4	723.3
Sudan	..	..	..	..	16.5	5.0	..	..	..	..	..	..	..
Sweden	..	..	10.3	8.7	..	..	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	..	..	..	..	..	..	..	..	..	..	..	..	..
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	12.9	..	30.0	..	..	..	..	..	–7.4	..	21.4	..	140.8
Thailand	..	..	11.5	10.4	1.5	2.3	–0.3	–0.4	–0.3	–0.8	0.9[b]	..	1,288.9
Togo	..	..	10.7	..	..	..	1.6	..	..	..	..	..	38.2
Trinidad and Tobago	9.1[a]	..	16.4	..	10.8	6.5	0.0	..	0.7[a]	..	..	..	276.2
Tunisia	..	..	31.0	..	..	..	7.6	..	..	..	..	..	150.2
Turkey	6.5	5.1	27.1	15.1	6.0	4.7	1.6	1.0	–3.2	–6.6	3.7	2.9	3,600.0
Turkmenistan	..	..	..	..	..	..	..	..	..	..	..	..	..
Uganda	..	..	..	..	..	..	..	..	..	..	..	..	151.6
Ukraine	..	..	..	..	..	49.2	..	..	..	..	..	..	31.5
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	3.6	2.8	6.4[b]	..	..	..	..	..	..	..	..	..	..
United States	..	..	2.1	2.0	..	..	..	..	..	..	..	..	..
Uruguay	5.0	..	14.2	..	11.1	11.1	–3.2	..	3.3	..	..	..	17.0
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..	212.0
Venezuela	22.3	..	50.9	..	1.1	4.2	–11.1	..	9.3	..	..	..	5,914.1
Vietnam	..	..	..	..	..	44.0	..	..	..	..	..	..	2.6
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	..	..	3.0	..	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..	..	..	..	921.7
Zambia	32.2	..	..	..	..	..	..	..	..	..	..	..	417.2
Zimbabwe	10.8	11.3	..	..	29.7	7.5	..	..	..	..	..	..	197.3

Note: Data are averages for the period shown except for proceeds from privatization, for which the data refer to the total for the period.

a. Selected major state-owned enterprises only. b. Includes financial state-owned enterprises. c. Data for 1985–90 refer to the 10 largest state-owned enterprises. Data for 1990–96 refer to 210 enterprises. d. As a percentage of formal sector employment. e. Nonoperating revenue before 1989 is split between current transfers and grants. All nonoperating revenue since 1989 is classified as current transfers. f. Data refer to industrial state-owned enterprises. g. Data refer to central public enterprises only. h. Data prior to 1991 have not been shown because of lack of consistency. i. Data for economic activity and employment refer to nonfinancial enterprises in both the controlled and the noncontrolled sectors. Data on investment through 1986 refer to nonfinancial enterprises in both the controlled and the noncontrolled sectors. Data since 1987 include financial enterprises in the noncontrolled sector. Data on overall balances before transfers and net financial flows from government refer only to nonfinancial enterprises in the controlled sector. j. Data refer to state- and majority state-owned enterprises in 1990–97.

State-owned enterprises 5.8

About the data

State-owned enterprises are government-owned or -controlled economic entities that generate most of their revenue by selling goods and services. This definition encompasses commercial enterprises directly operated by a government department and those in which the government holds a majority of shares directly or indirectly through other state enterprises. It also includes enterprises in which the state holds a minority of shares if the distribution of the remaining shares leaves the government with effective control. It excludes public sector activity—such as education, health services, and road construction and maintenance—that is financed in other ways, usually from the government's general revenue. Because financial enterprises are of a different nature, they have generally been excluded from the data on state enterprises.

The definition of a state enterprise varies among countries and within countries over time. In exceptional cases governments include noncommercial activities, such as agricultural research institutes, in their data on state enterprises. But more often they omit activities that clearly are state enterprises. The most common omissions occur when governments use a narrow definition of state enterprises—for example, by excluding those with a particular legal form (such as departmental enterprises), those owned by local governments (typically utilities), or those considered unimportant in terms of size or need for fiscal resources. Accordingly, data on state enterprises tend to underestimate their relative importance in the economy.

Although attempts have been made to correct for differences in definitions and coverage across countries, inconsistencies remain. These cases are detailed in the country notes in the World Bank's *Bureaucrats in Business* (1995b). The state enterprises covered in the table are limited to central or federal government enterprises because data on enterprises owned by local governments are extremely limited. Another weakness in the data is that many state enterprises do not follow generally accepted accounting principles, so accounting rules can vary by country and enterprise. In many cases small state enterprises are not audited by internationally accredited accounting firms, so there may be no independent check on their record keeping and reporting.

To aid in assessing the importance of government ownership, the table includes three measures of the economic size of state enterprises: share in economic activity, share in investment, and share in employment. Indicators that measure the performance of state enterprises and their effect on the macroeconomy and growth include credit, net financial flows from government, and overall balance before transfers. These indicators do not, however, allow analysis of the relative efficiency of state enterprises and private firms because not enough data are available on ownership by economic sector. Data in the table are period averages for 1985–90 and 1990–96. The updating of data has necessitated revisions to earlier years to ensure consistency over the time series. For the more recent period *World Development Indicators 1999* includes data for 11 more economies than last year's edition.

Data on proceeds from privatization are included in the table because privatization—that is, the transfer of productive assets from the public to the private sector—has been one of the defining economic changes of the 1980s and 1990s. Direct sales are the most common privatization method, accounting for more than half of privatization revenues in 1997. Direct sales enable governments to attract strategic investors who can transfer capital, technology, and managerial know-how to newly privatized enterprises. Share issues in domestic and international capital markets are the second most common method, accounting for most of the remaining sales.

Large sales proceeds do not necessarily imply major changes in the control of stock of state-owned enterprises. For example, selling equity may not change effective control. It may only generate revenue, with no gains in efficiency. A preliminary analysis suggests that the increase in proceeds from privatization in recent years is due to a larger number of countries privatizing a few firms rather than to a radical restructuring of ownership in many countries (Haggarty and Shirley 1997).

Definitions

- **Economic activity** is the value added of state enterprises, estimated as their sales revenue minus the cost of their intermediate inputs, or as the sum of their operating surplus (balance) and wage payments.
- **Investment** refers to fixed capital formation by state enterprises.
- **Credit** is credit extended to state enterprises by domestic financial institutions.
- **Net financial flows from government** is the difference between total financial flows from the government to state enterprises (including government loans, equity, and subsidies) and total flows from state enterprises to the government (including dividends and taxes). Taxes paid by state enterprises are treated as a transfer of financial resources to the government.
- **Overall balance before transfers** is the sum of net operating and net nonoperating revenues minus net capital expenditure. Net operating revenues (or operating surplus or balance) refer to gross operating profits, or operating revenues, minus the costs of intermediate inputs, wages, factor rentals, and depreciation.
- **Employment** for many countries refers to the share of full-time state enterprise employees in total employment, but for some it refers to employment only in selected state enterprises, including financial ones, and for others it refers to employment as a share of total formal sector employment. Thus the data on state enterprise employment are not directly comparable.
- **Proceeds from privatization** include all sales of public assets to private entities through public offers, direct sales, management and employee buyouts, concessions or licensing agreements, and joint ventures.

Data sources

Data on state enterprises were collected from World Bank member country central banks, finance ministries, enterprises, and World Bank and International Monetary Fund reports. These data were then collated into a database for the World Bank Policy Research Report *Bureaucrats in Business: The Economics and Politics of Government Ownership* (1995b). Updates to this database have been made for several economies. Data on privatization are from the World Bank's *Global Development Finance 1999* CD-ROM. Data on credit are from the International Monetary Fund's *International Financial Statistics*.

5.9 Transport infrastructure

	Roads			Railways			Air		
	Paved roads % **1997**	Normalized road index **1997**	Goods transported million ton-km **1997**	Passenger-km per PPP $ million of GDP **1997**	Goods transported ton-km per PPP $ million of GDP **1997**	Diesel locomotives available % **1997**	Aircraft departures thousands **1996**	Passengers carried thousands **1996**	Air freight million ton-km **1996**
Albania	*30.0*	..	*3*	*22,092*	*5,523*	..	1	13	..
Algeria	*68.9*	..	..	*14,542*	..	..	45	3,494	16
Angola	25.0	..	*2,187*	..	..	..	8	585	62
Argentina	*29.1*	100	..	..	..	..	131	7,913	177
Armenia	*100.0*	80	23	9,397	..	30	..	..	..
Australia	*38.7*	123	*128,000*	..	..	..	371	30,075	1,834
Austria	100.0	195	*73,200*	54,166	*78,419*	*89*	118	4,719	192
Azerbaijan	..	..	15,371	..	..	..	20	1,233	28
Bangladesh	*12.3*	..	..	..	..	..	13	1,252	136
Belarus	98.2	148	273	*264,933*	*626,034*	*93*	32	843	5
Belgium	*79.7*	85	..	30,127	*31,973*	*86*	165	5,174	591
Benin	*20.0*	62	*270*	..	..	..	2	75	16
Bolivia	*5.5*	..	*1*	..	..	..	32	1,784	47
Bosnia and Herzegovina	*52.3*	..	..	..	..	..	..	..	..
Botswana	*23.5*	242	..	..	..	..	4	104	0
Brazil	*9.3*	130	*384,000*	..	..	..	484	22,012	1,645
Bulgaria	92.0	108	27	*141,558*	*210,151*	*80*	14	718	24
Burkina Faso	*16.0*	..	..	..	..	..	3	138	17
Burundi	*7.1*	..	..	..	..	..	1	9	0
Cambodia	7.5	..	0	..	..	..	..	..	..
Cameroon	*12.5*	..	..	11,588	*34,031*	68	4	362	42
Canada	*35.3*	..	*300*	*2,084*	..	..	306	22,856	1,781
Central African Republic	..	..	..	..	..	..	2	75	16
Chad	*0.8*	..	..	..	..	..	2	93	16
Chile	*13.8*	44	*4,110*	*4,274*	*5,999*	*65*	94	3,622	806
China	..	..	*1,360,000*	*93,767*	*364,679*	*82*	493	51,770	1,689
Hong Kong, China	*100.0*	..	*14*	..	..	..	..	..	..
Colombia	12.0	39	..	*56*	..	..	195	8,342	311
Congo, Dem. Rep.	..	..	..	*689*	..	*15*	4	178	43
Congo, Rep.	*9.7*	113	..	*70,625*	..	*35*	5	253	17
Costa Rica	17.0	191	..	..	..	*50*	21	918	45
Côte d'Ivoire	*9.7*	79	..	*7,824*	*13,487*	*53*	5	179	17
Croatia	*81.5*	..	..	*45,137*	*86,589*	*63*	15	727	2
Cuba	49.0	..	7	..	..	*53*	14	929	44
Czech Republic	*100.0*	..	470	*75,364*	*207,322*	*86*	27	1,394	22
Denmark	*100.0*	91	..	*38,993*	*14,518*	..	108	5,892	172
Dominican Republic	*49.4*	115	..	..	..	..	1	30	0
Ecuador	18.9	103	*54,671*	..	..	..	23	1,925	33
Egypt, Arab Rep.	*78.1*	170	..	*317,317*	..	..	41	4,282	198
El Salvador	19.8	69	4	..	..	..	21	1,800	16
Eritrea	*21.8*	..	..	..	..	..	..	..	..
Estonia	50.8	90	49	*63,128*	*536,076*	*80*	5	149	1
Ethiopia	*15.0*	47	..	..	..	..	25	743	118
Finland	64.0	69	383	32,596	*68,983*	*88*	103	5,598	237
France	100.0	128	..	*47,024*	*39,107*	*93*	550	41,253	4,843
Gabon	*8.2*	38	..	*9,487*	*61,975*	*89*	7	431	35
Gambia, The	*35.4*	218	..	..	..	..	..	..	..
Georgia	*93.5*	..	*7*	51,829	..	34	3	152	2
Germany	*99.1*	..	*319,436*	34,780	*39,350*	*92*	567	40,118	6,036
Ghana	*24.1*	128	..	..	..	..	3	197	30
Greece	*91.8*	..	*2,357*	*13,409*	*1,913*	..	92	6,396	119
Guatemala	*27.6*	56	..	..	..	..	5	300	26
Guinea	*16.5*	150	..	..	..	..	1	36	1
Guinea-Bissau	*10.3*	..	..	..	..	..	1	21	0
Haiti	*24.3*	..	..	..	..	..	..	..	..
Honduras	*20.3*	118	..	..	..	..	..	..	..

Transport infrastructure 5.9

	Roads			Railways			Air		
	Paved roads % 1997	Normalized road index 1997	Goods transported million ton-km 1997	Passenger-km per PPP $ million of GDP 1997	Goods transported ton-km per PPP $ million of GDP 1997	Diesel locomotives available % 1997	Aircraft departures thousands 1996	Passengers carried thousands 1996	Air freight million ton-km 1996
Hungary	43.4	164	*39*	*89,681*	*104,305*	*64*	25	1,563	29
India	*45.7*	671	..	230,668	*176,994*	*90*	151	13,395	565
Indonesia	46.3	180	*18*	20,636	..	..	311	17,139	749
Iran, Islamic Rep.	*50.0*	..	..	*22,650*	..	*47*	63	7,610	110
Iraq	*86.0*	..	..	..	..	..	..	..	..
Ireland	*94.1*	261	..	17,558	*9,124*	*82*	95	7,677	102
Israel	100.0	91	9	*2,713*	*11,947*	*92*	50	3,695	1,113
Italy	*100.0*	54	*78,061*	42,403	*18,421*	*79*	307	25,839	1,459
Jamaica	*70.7*	752	..	..	..	..	18	1,388	25
Japan	*74.3*	68	..	*87,092*	*8,656*	*88*	564	95,914	6,801
Jordan	*100.0*	113	..	..	*47,605*	*90*	17	1,299	297
Kazakhstan	82.8	169	621	..	..	..	10	568	17
Kenya	*13.9*	124	..	*12,875*	..	..	14	779	48
Korea, Dem. Rep.	*6.4*	..	..	..	..	..	6	254	3
Korea, Rep.	74.0	118	2,772	*53,034*	*24,826*	*88*	207	33,003	6,551
Kuwait	*80.6*	..	..	..	..	..	19	2,133	334
Kyrgyz Republic	*91.1*	..	*110*	..	..	..	13	488	2
Lao PDR	*13.8*	..	..	..	..	..	4	125	1
Latvia	38.3	178	41	*156,795*	*1,114,235*	*88*	11	276	1
Lebanon	*95.0*	..	..	..	..	..	10	775	80
Lesotho	*17.9*	80	..	..	..	..	1	17	0
Libya	*57.1*	..	..	..	..	..	6	639	0
Lithuania	88.8	386	59	*59,802*	*545,075*	*88*	7	214	2
Macedonia, FYR	*63.8*	..	..	*18,932*	..	*45*	5	287	1
Madagascar	*11.6*	131	..	..	..	..	17	542	25
Malawi	19.0	195	1	*2,733*	*9,875*	..	4	153	4
Malaysia	*75.1*	..	..	8,456	*9,425*	*65*	188	15,118	1,415
Mali	*12.1*	71	..	..	..	..	2	75	16
Mauritania	*11.3*	50	..	..	..	..	5	235	17
Mauritius	93.0	145	..	..	..	..	9	717	129
Mexico	*37.4*	97	..	*2,427*	*53,891*	*68*	223	14,678	169
Moldova	*87.3*	155	*41*	..	..	..	4	190	1
Mongolia	3.4	..	2,564	..	..	..	..	..	..
Morocco	51.8	140	*27*	*19,060*	*55,524*	*75*	32	2,301	57
Mozambique	*18.7*	136	*3,770*	..	..	..	4	163	5
Myanmar	*12.2*	..	..	..	..	..	15	335	1
Namibia	8.3	193	*1,587*	*6,366*	*139,848*	*89*	7	237	29
Nepal	*41.5*	71	..	..	..	..	28	755	18
Netherlands	90.0	62	..	43,779	*9,751*	*88*	206	17,114	3,902
New Zealand	*58.1*	106	..	..	..	..	187	9,597	745
Nicaragua	*10.1*	..	..	..	..	..	1	51	9
Niger	*7.9*	25	..	..	..	..	2	75	16
Nigeria	*18.8*	153	..	..	..	*18*	6	221	5
Norway	74.0	95	261	..	..	..	280	12,727	177
Oman	*30.0*	..	..	..	..	..	18	1,620	106
Pakistan	58.0	365	..	94,544	*26,598*	..	70	5,375	427
Panama	*33.6*	..	..	..	..	..	17	689	18
Papua New Guinea	*3.5*	28	..	..	..	..	27	970	18
Paraguay	*9.5*	..	..	..	..	..	10	261	0
Peru	*10.1*	32	..	*1,604*	..	..	35	2,328	14
Philippines	0.2	..	..	..	..	..	65	7,263	385
Poland	65.7	131	1,670	*83,594*	*284,497*	*55*	36	1,806	70
Portugal	..	..	*369*	32,171	*13,596*	*88*	81	4,806	211
Puerto Rico	*100.0*	..	..	..	..	..	..	..	..
Romania	*51.0*	..	*616,044*	171,983	*231,591*	*78*	17	913	15
Russian Federation	..	..	887	239,056	..	..	465	22,117	854

5.9 Transport infrastructure

	Roads			Railways			Air		
	Paved roads % 1997	Normalized road index 1997	Goods transported million ton-km 1997	Passenger-km per PPP $ million of GDP 1997	Goods transported ton-km per PPP $ million of GDP 1997	Diesel locomotives available % 1997	Aircraft departures thousands 1996	Passengers carried thousands 1996	Air freight million ton-km 1996
Rwanda	*9.1*	116	..	..	..	..	1	9	0
Saudi Arabia	*42.7*	131	..	*839*	*4,207*	*80*	101	11,706	863
Senegal	*29.3*	104	*2,378*	*14,239*	..	*79*	5	155	17
Sierra Leone	8.0	110	..	..	..	..	0	15	0
Singapore	97.3	..	..	..	..	..	57	11,841	4,115
Slovak Republic	98.9	..	59,377	*93,511*	*297,405*	*87*	3	63	0
Slovenia	83.0	76	5	*26,466*	*112,524*	..	8	393	4
South Africa	*41.5*	..	..	*34,211*	*338,015*	*96*	88	7,183	329
Spain	99.0	95	593	26,469	*15,985*	87	333	27,759	740
Sri Lanka	*40.0*	543	*3,020*	72,287	..	..	9	1,171	159
Sudan	*36.3*	..	..	*5,556*	*38,841*	*42*	10	491	46
Sweden	77.2	128	..	35,890	*103,253*	..	184	9,879	250
Switzerland	..	..	340	..	..	..	218	10,468	1,511
Syrian Arab Republic	23.1	..	*4,655*	*11,355*	*29,657*	*100*	9	599	16
Tajikistan	*82.7*	..	..	..	..	..	3	594	3
Tanzania	*4.2*	63	..	*44,792*	*87,390*	*66*	6	224	3
Thailand	*97.5*	172	..	*29,755*	..	*75*	92	14,078	1,348
Togo	*31.6*	141	..	..	..	..	2	75	16
Trinidad and Tobago	*51.1*	273	..	..	..	..	14	897	22
Tunisia	*78.9*	171	..	*23,080*	*53,344*	*71*	14	1,371	18
Turkey	25.0	36	*135,781*	*13,906*	*17,557*	*74*	85	8,464	207
Turkmenistan	*81.2*	..	..	..	..	..	9	523	2
Uganda	..	..	..	..	*11,617*	..	1	100	1
Ukraine	95.0	..	1,250	*511,709*	*1,414,943*	*87*	28	1,151	17
United Arab Emirates	*100.0*	..	..	..	..	..	38	4,064	651
United Kingdom	100.0	56	..	..	..	..	772	64,209	7,618
United States	*60.5*	98	..	1,071	*361,900*	..	8,032	571,072	21,676
Uruguay	*90.0*	139	*2*	*7,414*	*16,123*	..	7	504	4
Uzbekistan	*87.3*	..	..	..	..	..	12	1,566	8
Venezuela	*39.4*	105	..	*0*	..	*65*	83	4,487	117
Vietnam	*25.1*	..	..	*19,819*	*16,353*	*92*	28	2,108	83
West Bank and Gaza	..	..	..	..	..	..	..	..	..
Yemen, Rep.	*8.1*	..	..	..	..	..	12	588	9
Yugoslavia, FR (Serb./Mont.)	89.3	..	*7*	..	..	..	..	..	..
Zambia	..	..	..	*32,611*	*56,428*	*82*	4	235	16
Zimbabwe	*47.4*	..	..	*22,561*	*196,441*	..	10	654	153
World	*44.4* m	115 m					18,746 s	1,389,943 s	
Low income	*18.7*	..					529	34,119	
Middle income	*50.0*	131					4,099	275,385	
Lower middle income	*50.0*	159					2,313	165,105	
Upper middle income	*47.1*	130					1,786	110,280	
Low & middle income	*29.6*	126					4,628	309,504	
East Asia & Pacific	*9.9*	..					1,294	110,201	
Europe & Central Asia	*82.7*	..					846	46,014	
Latin America & Carib.	*26.0*	104					1,513	76,275	
Middle East & N. Africa	*50.2*	..					397	38,521	
South Asia	*40.8*	454					284	22,445	
Sub-Saharan Africa	*15.8*	116					294	16,049	
High income	*90.9*	95					14,118	1,080,439	
Europe EMU	99.0	90					2,532	180,694	

Transport infrastructure 5.9

About the data

Transport infrastructure—highways, railways, ports and waterways, and airports and air traffic control systems—and the services that flow from it are crucial to the activities of households, producers, and governments. Because performance indicators vary significantly by transport mode and by focus (whether physical infrastructure or the services flowing from that infrastructure), highly specialized and carefully specified indicators are required. The table provides selected indicators of the size and extent of roads, railways, and air transport systems and the volume of freight and passengers carried. One additional indicator is included in *World Development Indicators 1999:* the percentage of diesel locomotives available.

Data for most transport sectors are not internationally comparable. Unlike for demographic statistics, national income accounts, and international trade data, the collection of infrastructure data has not been "internationalized." Data on roads are collected by the International Road Federation (IRF), and data on air transport by the International Civil Aviation Organization (ICAO). National road associations are the primary source of IRF data; in countries where such an association is lacking or does not respond, other agencies are contacted, such as road directorates, ministries of transport or public works, or central statistical offices. As a result the compiled data are of uneven quality.

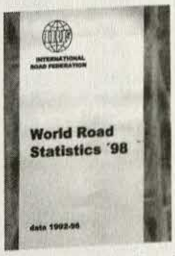
Even when data are available, they are often of limited value because of incompatible definitions, inappropriate geographical units of observation, or lack of timeliness. Data on passengers carried, for example, may be distorted because of "ticketless" travel or breaks in journeys; in such cases the statistics may report the number of passenger-kilometers for two passengers rather than one. Measurement problems are compounded because the mix of transported commodities changes over time, and in some cases shorter-haul traffic has been excluded from intercity traffic. Finally, the quality of transport service (reliability, transit time, and condition of goods delivered) is rarely measured but may be as important as quantity in assessing an economy's transport system. Serious efforts are needed to create international databases whose comparability and accuracy can be gradually improved.

Some form of normalization is required to measure the relative size of an indicator over time or across countries. The table presents normalized indicators for railway passengers and goods transported by rail as well as the normalized road index. While the rail traffic indicators are normalized by a single indicator—the size of the economy—the normalized road index uses a multidimensional regression function to estimate a country's "normal," or expected, stock of roads (Armington and Dikhanov 1996). Normalizing variables include population, population density, per capita income, urbanization, and regional differences. The value of the normalized road index shows whether a country's stock of roads exceeds or falls short of the average for countries with similar characteristics.

Definitions

• **Paved roads** are roads that have been sealed with asphalt or similar road building materials. • **Normalized road index** is the total length of roads in a country compared with the expected length of roads, where the expectation is conditioned on population, population density, per capita income, urbanization, and region-specific dummy variables. A value of 100 is "normal." If the index is more than 100, the country's stock of roads exceeds the average. • **Goods transported by road** are the volume of goods transported by road vehicles, measured in millions of metric tons times kilometers traveled. • **Railway passengers** refer to the total passenger-kilometers per million dollars of GDP measured in PPP terms (see *About the data* for tables 4.11 and 4.12 for discussions of PPP). • **Goods transported by rail** are the tonnage of goods transported times kilometers traveled per million dollars of GDP measured in PPP terms. • **Diesel locomotives available** are the diesel locomotives in service as a percentage of all diesel locomotives. • **Aircraft departures** are the number of domestic and international takeoffs of aircraft. • **Passengers carried** include both domestic and international aircraft passengers. • **Air freight** is the sum of the tons of freight, express, and diplomatic bags carried on each flight stage (the operation of an aircraft from takeoff to its next landing) multiplied by the stage distance.

Data sources


INTERNATIONAL ROAD FEDERATION

World Road Statistics '98

data 1992-96

Data on roads are from the International Road Federation's *World Road Statistics.* The normalized road index is based on World Bank staff estimates. Railway data are from a database maintained by the World Bank's Transportation, Water, and Urban Development Department, Transport Division. Air transport data are from the International Civil Aviation Organization's *Civil Aviation Statistics of the World.*

5.10 Power and communications

	Electric power			**Telephone mainlines**							**International telecommunications**	
	Consumption per capita kwh **1996**	Production average annual % growth **1980–96**	Transmission and distribution losses % of output **1996**	per 1,000 people **1997**	In largest city per 1,000 people **1997**	Waiting list thousands **1997**	Waiting time years **1997**	per employee **1997**	Revenue per line $ **1997**	Cost of local call $ per 3 minutes **1997**	Outgoing traffic minutes per subscriber **1997**	Cost of call to U.S. $ per 3 minutes **1997**
Albania	904	–0.3	52	23	*68*	*74.0*	4.9	19	430	*0.04*	471	7.19
Algeria	524	7.2	18	48	*55*	732.0	7.9	74	173	0.02	113	4.78
Angola	61	2.4	28	5	..	..	..	29	1,811	0.09	351	2.92
Argentina	1,541	3.0	18	191	*253*	19.0	0.0	295	818	0.10	32	7.08
Armenia	905	*–6.5*	38	150	..	*89.9*	..	55	74	..	91	..
Australia	8,086	4.4	7	505	..	0.0	0.0	111	1,572	0.19	104	2.94
Austria	5,952	1.9	6	492	..	*3.7*	0.0	235	940	*0.20*	*243*	3.11
Azerbaijan	1,822	*0.9*	22	87	*157*	162.8	>10	47	109	*0.19*	86	*3.85*
Bangladesh	97	11.1	30	*3*	*20*	*155.0*	6.6	*15*	*634*	*0.04*	*81*	..
Belarus	2,476	*0.0*	16	227	284	514.0	3.6	88	102	0.01	64	3.53
Belgium	6,878	3.1	5	468	*501*	0.3	0.0	188	*946*	0.17	258	2.54
Benin	48	6.5	87	6	*36*	*3.4*	0.8	30	1,023	*0.13*	221	7.24
Bolivia	371	4.0	12	69	*96*	..	..	290	391	..	54	..
Bosnia and Herzegovina	772	*–17.1*	23	80	548	*70.0*	4.0	212	384	0.04	219	3.08
Botswana	..	..	..	56	*180*	11.8	1.0	49	967	0.03	432	5.52
Brazil	1,660	4.6	17	107	*165*	2,400.0	1.5	195	882	0.09	28	4.36
Bulgaria	3,577	–0.2	13	323	*378*	423.0	6.6	101	82	0.01	28	..
Burkina Faso	..	..	..	3	29	..	..	29	1,158	0.10	216	11.62
Burundi	..	..	..	3	*51*	5.1	>10	26	987	0.04	154	11.75
Cambodia	..	..	..	2	..	*13.4*	2.8	19	1,381	0.09	431	..
Cameroon	171	3.5	20	5	..	45.0	7.9	41	983	0.07	335	*12.02*
Canada	15,129	2.7	7	609	..	..	0.0	*220*	749	*0.00*	232	*1.16*
Central African Republic	..	..	..	3	*15*	*0.3*	0.4	24	1,260	0.20	368	20.56
Chad	..	..	..	1	*6*	1.0	1.1	22	1,193	0.17	371	12.34
Chile	1,864	5.9	9	180	..	96.7	0.3	*239*	*741*	..	114	3.22
China	687	8.6	7	56	*190*	*812.0*	0.1	150	244	0.01	23	6.66
Hong Kong, China	5,013	7.6	14	565	*584*	..	0.0	101	2,088	0.00	467	2.63
Colombia	922	5.0	22	148	*251*	800.0	1.3	288	700	0.01	30	3.82
Congo, Dem. Rep.	130	2.4	3	*1*	..	*6.0*	..	*17*	..	..	*41*	..
Congo, Rep.	207	8.5	0	*8*	..	*0.8*	0.8	*23*	*2,195*	*0.12*	*191*	..
Costa Rica	1,349	5.0	12	169	*478*	49.4	1.0	133	407	*0.04*	114	4.93
Côte d'Ivoire	174	–0.1	16	9	40	*82.4*	6.3	40	1,413	0.11	282	7.15
Croatia	2,291	*–0.2*	16	335	*324*	72.0	0.8	143	455	0.03	173	5.04
Cuba	966	1.0	13	34	74	..	..	24	1,243	*0.00*	75	7.35
Czech Republic	4,875	0.9	8	318	594	406.0	1.1	121	487	0.07	96	3.97
Denmark	6,113	3.3	5	633	..	..	0.0	195	1,012	0.17	182	2.19
Dominican Republic	608	4.0	25	88	*129*	..	..	*148*	..	..	162	..
Ecuador	616	6.2	21	75	*194*	*60.2*	0.8	158	395	0.02	73	5.32
Egypt, Arab Rep.	924	7.4	0	56	..	*1,310.0*	3.9	66	253	*0.01*	37	6.82
El Salvador	516	5.2	13	*56*	*198*	*200.0*	4.0	*60*	*689*	*0.05*	*88*	..
Eritrea	..	..	..	6	34	42.0	>10	30	980	0.03	95	8.24
Estonia	3,293	*–5.3*	19	321	267	76.9	2.5	125	324	0.05	142	4.33
Ethiopia	18	4.1	1	3	*37*	207.0	>10	28	525	0.03	68	7.82
Finland	12,979	3.5	4	556	677	..	0.0	160	1,068	*0.14*	130	2.85
France	6,091	4.7	6	575	..	..	0.0	204	797	0.13	101	1.52
Gabon	742	3.5	10	33	*85*	10.0	5.1	48	2,000	0.15	494	..
Gambia, The	..	..	..	21	*43*	22.0	>10	28	*864*	0.34	216	5.88
Georgia	1,020	*–4.0*	23	114	*174*	181.0	5.7	60	71	*0.00*	*0*	..
Germany	5,596	1.1	5	550	551	..	0.0	206	1,021	0.14	106	2.49
Ghana	275	4.2	0	6	*28*	*28.3*	1.5	30	1,260	*0.08*	208	..
Greece	3,395	4.6	7	516	*771*	48.5	0.3	239	605	0.04	110	3.18
Guatemala	364	5.5	13	41	*103*	*100.0*	1.6	83	586	*0.03*	113	..
Guinea	..	..	..	3	9	1.9	0.5	24	1,572	0.11	290	7.82
Guinea-Bissau	..	..	..	7	..	*0.7*	3.2	32	*1,447*	*0.09*	384	..
Haiti	34	0.9	54	8	*17*	*100.0*	>10	21	*1,443*	0.00	*205*	*7.07*
Honduras	350	8.6	27	37	95	259.5	7.6	50	624	*0.06*	180	6.40

Power and communications 5.10

	Electric power			Telephone mainlines							International telecommunications	
	Consumption per capita kwh 1996	Production average annual % growth 1980–96	Transmission and distribution losses % of output 1996	per 1,000 people 1997	In largest city per 1,000 people 1997	Waiting list thousands 1997	Waiting time years 1997	per employee 1997	Revenue per line $ 1997	Cost of local call $ per 3 minutes 1997	Outgoing traffic minutes per subscriber 1997	Cost of call to U.S. $ per 3 minutes 1997
Hungary	2,814	2.3	13	304	*412*	40.4	0.1	170	448	0.12	93	3.21
India	347	9.0	18	19	*104*	2,710.0	1.0	*34*	*300*	0.02	24	6.10
Indonesia	296	14.0	12	25	*105*	..	..	131	508	0.04	71	4.69
Iran, Islamic Rep.	1,142	9.3	20	107	*233*	*1,380.0*	1.9	137	199	0.01	25	*6.02*
Iraq	1,361	6.1	0	32	..	..	..	..	..	..	..	..
Ireland	4,363	3.7	9	411	..	..	..	136	1,247	0.17	463	2.20
Israel	5,081	5.8	4	450	*398*	*22.0*	0.1	313	740	0.07	*126*	3.07
Italy	4,196	1.9	7	447	*498*	*32.0*	0.1	273	881	*0.20*	90	2.28
Jamaica	2,108	6.3	11	*140*	..	*183.0*	3.8	*88*	*995*	*0.06*	*183*	5.45
Japan	7,083	4.0	4	479	*991*	..	0.0	*289*	1,443	*0.08*	28	3.72
Jordan	1,187	11.0	10	70	*178*	*156.0*	4.8	*75*	*707*	*0.03*	*216*	..
Kazakhstan	2,865	*0.7*	15	108	*265*	395.0	..	41	165	*0.00*	*63*	6.69
Kenya	126	6.3	16	8	71	77.2	5.6	20	1,139	0.06	104	*11.17*
Korea, Dem. Rep.	248	0.8	84	*49*	..	..	..	..	..	..	..	..
Korea, Rep.	4,453	11.7	5	444	*450*	..	0.0	279	692	0.05	43	3.15
Kuwait	12,808	4.8	0	227	..	*2.6*	0.2	49	579	*0.00*	389	5.44
Kyrgyz Republic	1,479	*2.4*	33	76	*235*	57.5	>10	*51*	53	..	83	8.73
Lao PDR	..	..	..	5	*57*	*2.6*	1.2	23	933	..	263	7.16
Latvia	1,783	0.1	47	302	*328*	72.1	2.7	140	199	0.08	59	6.09
Lebanon	1,651	1.2	13	179	..	..	..	112	*580*	0.05	107	7.29
Lesotho	..	..	..	10	*63*	*9.3*	6.0	*19*	713	*0.04*	1,593	..
Libya	3,579	10.2	0	*68*	*84*	..	..	*32*	*619*	*0.03*	93	..
Lithuania	1,785	*–0.2*	11	283	362	102.0	2.0	106	130	0.02	51	7.88
Macedonia, FYR	*2,443*	..	..	204	*235*	*40.0*	1.7	117	245	0.01	127	4.50
Madagascar	..	..	..	3	*5*	9.6	3.0	15	1,144	0.10	176	23.22
Malawi	..	..	..	4	*33*	30.9	>10	*8*	*900*	*0.03*	*214*	11.02
Malaysia	2,078	9.9	11	195	..	*160.0*	0.4	154	772	0.03	172	5.33
Mali	..	..	..	2	*17*	..	..	17	2,336	*0.17*	477	15.42
Mauritania	..	..	..	5	*13*	*1.2*	0.7	29	2,062	*0.13*	417	..
Mauritius	..	..	..	195	*249*	23.2	0.7	124	525	0.05	111	5.11
Mexico	1,381	5.5	15	96	..	*197.0*	0.8	190	829	0.14	115	3.79
Moldova	1,314	*–4.4*	23	145	*277*	179.0	6.6	81	74	0.10	89	6.36
Mongolia	..	..	..	37	88	46.9	7.7	17	254	0.02	34	10.25
Morocco	408	5.0	4	50	*112*	29.0	0.2	97	468	0.08	109	6.30
Mozambique	76	–19.3	0	4	*24*	16.9	5.9	30	1,073	*0.04*	248	..
Myanmar	58	6.6	36	5	*20*	*55.0*	2.2	29	1,802	*0.17*	76	*26.86*
Namibia	..	..	..	58	*308*	6.5	0.8	55	873	*0.04*	661	..
Nepal	39	12.0	28	8	..	*215.0*	7.6	37	281	*0.02*	108	..
Netherlands	5,555	1.9	4	564	..	..	..	294	930	0.09	173	2.32
New Zealand	8,420	3.0	11	486	..	..	0.0	226	1,221	*0.00*	220	3.95
Nicaragua	256	4.0	28	29	*57*	29.3	2.1	41	561	0.11	316	..
Niger	..	..	..	2	*18*	*1.4*	1.1	12	1,445	*0.15*	323	..
Nigeria	85	5.6	32	*4*	..	*98.1*	4.2	*28*	*1,929*	*0.26*	*121*	..
Norway	23,487	2.1	8	621	*732*	..	0.0	129	1,407	0.11	176	1.64
Oman	2,973	15.0	0	87	*165*	3.9	0.2	95	1,371	0.08	371	..
Pakistan	333	9.6	23	19	*61*	303.0	1.2	48	386	*0.05*	30	..
Panama	1,140	3.5	18	134	*250*	*28.8*	1.1	99	*764*	*0.00*	113	*5.20*
Papua New Guinea	..	..	..	*11*	*200*	*0.3*	0.1	*23*	*2,418*	*0.13*	*572*	..
Paraguay	914	40.5	7	43	*114*	..	..	35	936	*0.06*	*123*	..
Peru	598	2.5	15	68	*132*	50.4	0.2	282	926	0.09	51	4.81
Philippines	405	3.2	17	29	..	*900.0*	2.8	132	582	*0.00*	*108*	*6.22*
Poland	2,420	0.9	13	194	..	*2,330.0*	2.8	103	415	*0.06*	70	*4.12*
Portugal	3,044	6.3	10	402	701	9.4	0.1	186	770	0.08	98	3.35
Puerto Rico	..	..	..	351	*437*	*57.0*	0.9	168	920	*0.13*	*723*	..
Romania	1,757	–1.8	12	167	..	*1,300.0*	4.0	73	145	*0.01*	29	4.98
Russian Federation	4,165	*0.8*	9	183	*429*	7,840.0	8.5	60	205	..	36	7.55

5.10 Power and communications

	Electric power			Telephone mainlines							International telecommunications	
	Consumption per capita kwh **1996**	Production average annual % growth **1980–96**	Transmission and distribution losses % of output **1996**	per 1,000 people **1997**	In largest city per 1,000 people **1997**	Waiting list thousands **1997**	Waiting time years **1997**	per employee **1997**	Revenue per line $ **1997**	Cost of local call $ per 3 minutes **1997**	Outgoing traffic minutes per subscriber **1997**	Cost of call to U.S. $ per 3 minutes **1997**
Rwanda	..	..	..	3	..	..	*>10*	*20*	*423*	..	*90*	..
Saudi Arabia	3,980	9.8	8	117	*178*	*1,190.0*	5.8	114	1,023	0.02	351	*6.41*
Senegal	103	3.6	16	13	*37*	16.7	1.1	86	1,150	0.09	239	8.20
Sierra Leone	..	..	..	4	*20*	*14.0*	>10	18	131	*0.07*	222	..
Singapore	7,196	8.3	4	543	*461*	..	0.0	203	1,751	*0.03*	689	2.42
Slovak Republic	4,450	1.5	6	259	601	109.0	0.8	91	326	0.05	229	4.46
Slovenia	4,766	2.0	6	364	*661*	*48.7*	1.0	229	434	0.03	157	4.71
South Africa	3,719	3.9	8	107	*415*	116.0	0.4	80	942	0.07	88	..
Spain	3,749	3.2	9	403	475	3.7	0.0	247	691	0.09	*77*	2.66
Sri Lanka	203	6.3	17	17	*271*	284.0	6.3	30	5,943	0.04	106	6.76
Sudan	51	6.2	32	4	*34*	320.0	>10	46	539	0.03	137	8.02
Sweden	14,239	3.1	7	679	*844*	..	0.0	177	806	0.13	177	1.81
Switzerland	6,919	1.5	7	661	*966*	*0.3*	0.0	212	1,447	0.14	417	2.07
Syrian Arab Republic	755	8.7	0	88	*132*	2,950.0	>10	70	1,134	0.05	69	33.41
Tajikistan	2,292	*1.9*	12	38	*221*	53.1	..	46	38	*0.00*	60	10.50
Tanzania	59	7.4	12	3	*23*	37.2	6.7	22	*778*	0.10	97	4.46
Thailand	1,289	12.6	9	80	*331*	620.0	0.9	137	428	0.10	56	5.87
Togo	..	..	..	6	23	13.0	>10	30	1,557	0.10	316	11.56
Trinidad and Tobago	3,041	4.3	10	190	*137*	6.0	0.5	88	781	0.04	255	3.31
Tunisia	674	6.2	11	70	*80*	77.5	1.3	105	451	0.06	147	5.70
Turkey	1,139	9.7	17	250	*367*	413.0	0.4	215	201	0.07	36	2.34
Turkmenistan	1,020	*3.5*	11	78	*153*	66.9	3.4	47	78	..	28	..
Uganda	..	..	..	2	*31*	*6.3*	0.9	37	751	*0.19*	122	8.31
Ukraine	2,640	*–0.7*	10	186	416	2,962.2	6.6	72	116	0.10	52	..
United Arab Emirates	8,030	7.6	0	351	*333*	0.6	0.0	126	1,347	*0.00*	884	3.78
United Kingdom	5,198	1.3	9	540	..	..	0.0	214	1,015	0.20	172	1.16
United States	11,796	3.0	7	644	..	..	0.0	187	1,280	*0.09*	134	..
Uruguay	1,605	3.6	20	232	*308*	..	0.0	132	888	0.19	90	4.98
Uzbekistan	1,657	*2.1*	9	63	*216*	230.2	..	50	80	..	42	..
Venezuela	2,498	5.1	20	116	*329*	392.0	3.2	180	821	0.07	56	4.48
Vietnam	177	9.6	19	21	*90*	..	..	20	520	*0.11*	35	..
West Bank and Gaza	..	..	..	41	..	202.0	>10	102	520	0.05	*199*	0.61
Yemen, Rep.	99	11.1	26	13	*74*	78.6	5.0	53	302	*0.02*	116	..
Yugoslavia, FR (Serb./Mont.)	2,972	*17.1*	9	206	450	154.0	2.2	*178*	247	0.01	103	6.19
Zambia	560	–2.8	11	9	*24*	11.6	..	24	1,780	0.09	167	3.91
Zimbabwe	765	6.0	7	17	*62*	109.0	4.2	33	639	0.03	279	6.49
World	2,027 w	4.7 w	8 w	118 w	*254* w	*34,865.5* s	0.9 m	180 m	616 w	*0.05* m	116 m	*5.16* m
Low income	279	8.5	19	16	*59*	4,304.8	1.5	36	331	*0.08*	220	8.02
Middle income	1,222	8.2	11	87	*235*	*28,927.8*	1.3	144	381	0.04	90	5.16
Lower middle income	1,020	10.9	10	71	*228*	*22,572.6*	2.0	126	286	*0.02*	58	5.87
Upper middle income	2,031	4.4	13	150	*248*	*8,233.6*	0.8	177	599	0.05	112	4.46
Low & middle income	851	8.2	12	60	*177*	*34,710.9*	1.3	140	375	*0.05*	114	6.22
East Asia & Pacific	624	8.3	10	50	*378*	*1,901.9*	1.2	145	292	*0.07*	56	5.60
Europe & Central Asia	2,788	12.1	11	204	*363*	*20,679.6*	2.7	109	225	0.04	84	4.33
Latin America & Carib.	1,347	5.1	16	110	*192*	..	0.9	213	*796*	*0.04*	82	4.42
Middle East & N. Africa	1,166	8.4	9	75	*153*	*6,038.0*	2.9	104	445	*0.03*	111	6.02
South Asia	313	9.0	19	18	*78*	3,297.3	6.3	*35*	342	*0.02*	68	..
Sub-Saharan Africa	439	3.3	10	16	*60*	*1,439.9*	0.9	68	961	*0.09*	249	8.11
High income	7,941	3.1	6	506	..	66.6	0.0	220	*1,071*	0.08	165	2.63
Europe EMU	5,257	2.6	6	505	..	..	0.0	228	930	0.08	106	2.51

Power and communications 5.10

About the data

A country's production of electricity is a basic indicator of its size and level of development. Although a few countries export electric power, most production is for domestic consumption. Expanding the supply of electricity to meet the growing demand of increasingly urbanized and industrialized economies without incurring unacceptable social, economic, and environmental costs is one of the great challenges facing developing countries.

Data on electric power production and consumption are collected from national energy agencies by the International Energy Agency (IEA) and adjusted by the IEA to meet international definitions. Adjustments are made, for example, to account for self-production by establishments that, in addition to their main activities, generate electricity wholly or partly for their own use. In some countries self-production by households and small entrepreneurs is substantial because of remoteness or unreliable public power sources, and in these cases it may not be adequately reflected in these adjustments. Electricity consumption is equivalent to production less power plants' own use and transmission, distribution, and transformation losses. It includes consumption by auxiliary stations, losses in transformers that are considered integral parts of those stations, and electricity produced by pumping installations. It covers electricity generated by primary sources of energy—coal, oil, gas, nuclear, hydro, geothermal, wind, tide and wave, and combustible renewables—where data are available. Neither production nor consumption data capture the reliability of supplies, including frequency of outages, breakdowns, and load factors.

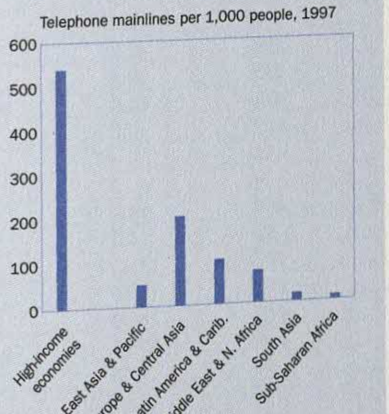
Over the past decade privatization and liberalization have spurred dramatic growth in telecommunications in many countries. The table presents some common performance indicators for telecommunications, including measures of supply and demand, service quality, productivity, economic and financial performance, capital investment, and tariffs.

Demand for telecommunications is often measured by the sum of telephone mainlines and the number of registered applicants for new connections. (A mainline is normally identified by a unique number that is the one billed.) In some countries the list of registered applicants does not reflect real current pending demand, which is often hidden or suppressed, reflecting an extremely short supply that has discouraged potential applicants from applying for telephone service. And in some cases waiting lists may overstate demand because applicants have placed their names on the list several times to improve their chances. Waiting time is calculated by dividing the number of applicants on the waiting list by the average number of mainlines added each year over the past three years. The number of mainlines no longer reflects a telephone system's full capacity because mobile telephones provide an alternative point of access. (See table 5.11 for data on mobile phones.)

The table includes two measures of efficiency in telecommunications: mainlines per employee and revenue per mainline. Caution should be used in interpreting the estimates of mainlines per employee because firms often subcontract part of their work. The cross-country comparability of revenue per mainline may also be limited because, for example, some countries do not require telecommunications providers to submit financial information; the data usually do not include revenues from cellular and mobile phones or radio, paging, and data services; and there are definitional and accounting differences between countries.

Figure 5.10

People in high-income economies still have far better access to telephones



Source: Table 5.10 based on ITU data.

Among developing economies, those in Europe and Central Asia have the best access to telephones, but access is still only about a third that in high-income economies.

Definitions

- **Electric power consumption** measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants.
- **Electric power production** refers to gross production in kilowatt-hours by private companies, cooperative organizations, local and regional authorities, government organizations, and self-producers. Electric power production growth is average annual growth in power production. • **Electric power transmission and distribution losses** are losses in transmission between sources of supply and points of distribution and in distribution to consumers, including pilferage. • **Telephone mainlines** are telephone lines connecting a customer's equipment to the public switched telephone network. Data are presented for the entire country and the largest city. • **Waiting list** shows the number of applications for a connection to a mainline that have been held up by a lack of technical capacity. • **Waiting time** is the approximate number of years applicants must wait for a telephone line. • **Mainlines per employee** are calculated by dividing the number of mainlines by the number of telecommunications staff (with part-time staff converted to full-time equivalents) employed by telecommunications enterprises providing public telecommunications services. • **Revenue per line** is the revenue received per telephone line by firms for providing telecommunications services. • **Cost of local call** is the cost of a three-minute call within the same exchange area using the subscriber's equipment (that is, not from a public phone). • **Outgoing traffic** is the telephone traffic, measured in minutes per subscriber, that originated in the country and has a destination outside the country. • **Cost of international call to U.S.** is the cost of a three-minute peak rate call from the country to the United States.

Data sources

Data on electricity consumption, power growth, and losses are from the IEA's *Energy Statistics and Balances of Non-OECD Countries 1995–96*, the IEA's *Energy Statistics of OECD Countries 1995–96*, and the United Nations' *Energy Statistics Yearbook*. Telecommunications data are from the International Telecommunication Union's (ITU) *World Telecommunication Development Report*, except for data on telephone traffic, which are from *Direction of Traffic*, published by TeleGeography and the ITU.

5.11 The information age

	Daily newspapers	Radios	Television		Mobile phones	Fax machines	Personal computers	Internet hosts
			Sets	Cable subscribers				
	per 1,000 people **1996**	per 1,000 people **1996**	per 1,000 people **1997**	per 1,000 people **1997**	per 1,000 people **1997**	per 1,000 people **1996**	per 1,000 people **1997**	per 10,000 people **July 1998**
Albania	35	235	*161*	*0.0*	1	..	..	0.23
Algeria	38	239	*67*	*0.0*	1	0.2	4.2	0.01
Angola	11	54	91	..	1	..	0.7	0.00
Argentina	123	677	289	156.3	56	2.0	39.2	15.92
Armenia	*23*	5	*218*	..	2	0.1	..	1.23
Australia	297	1,385	638	38.1	264	48.6	362.2	400.17
Austria	296	740	496	132.0	144	*35.4*	210.7	163.45
Azerbaijan	*28*	20	*211*	*0.1*	5	..	..	0.30
Bangladesh	9	50	*7*	..	*0*	*0.0*	..	*0.00*
Belarus	*174*	290	314	..	1	1.5	..	0.62
Belgium	160	792	510	361.8	95	18.6	235.3	150.65
Benin	2	108	*91*	*0.0*	1	0.2	0.9	0.02
Bolivia	55	672	*115*	*3.4*	15	..	..	0.64
Bosnia and Herzegovina	*202*	248	41	..	2	..	..	1.41
Botswana	27	155	*27*	..	*0*	2.3	*13.4*	3.70
Brazil	40	435	316	16.3	28	3.1	26.3	9.88
Bulgaria	257	531	*366*	..	8	*1.8*	*29.7*	7.45
Burkina Faso	1	32	*6*	..	0	..	0.7	0.09
Burundi	3	68	10	..	0	0.7	..	0.00
Cambodia	..	127	124	..	3	0.3	0.9	0.05
Cameroon	7	162	*81*	..	0	..	*1.5*	0.00
Canada	157	1,078	708	261.4	139	33.0	270.6	335.96
Central African Republic	2	84	*5*	..	0	0.1	..	0.00
Chad	0	249	*2*	*0.0*	0	0.0	..	0.00
Chile	*99*	354	233	42.8	28	2.7	54.1	15.44
China	..	195	270	39.7	10	1.6	6.0	0.16
Hong Kong, China	739	695	412	61.5	343	53.2	230.8	108.02
Colombia	46	565	217	5.5	35	4.0	33.4	2.91
Congo, Dem. Rep.	3	98	*43*	..	0	*0.1*	..	0.00
Congo, Rep.	*8*	124	*8*	..	*0*	*0.0*	..	0.00
Costa Rica	94	271	403	14.4	19	2.5	..	8.08
Côte d'Ivoire	17	157	61	0.0	2	..	3.3	0.18
Croatia	108	333	*267*	*11.0*	27	11.3	*22.0*	12.84
Cuba	118	351	241	*0.0*	0	*0.0*	..	0.08
Czech Republic	254	806	447	68.0	51	10.0	82.5	63.84
Denmark	309	1,146	568	238.6	273	*47.9*	360.2	358.85
Dominican Republic	52	177	*84*	*15.5*	16	0.3	..	5.96
Ecuador	70	342	294	11.8	13	..	*13.0*	1.01
Egypt, Arab Rep.	40	316	*127*	..	0	0.5	7.3	0.33
El Salvador	48	461	*250*	*4.4*	7	..	..	1.07
Eritrea	..	101	11	..	0	0.4	..	0.00
Estonia	174	680	479	15.1	99	*8.8*	15.1	131.28
Ethiopia	1	194	*5*	..	0	0.0	..	0.01
Finland	455	1,385	534	170.0	417	38.5	310.7	996.13
France	218	943	606	27.7	99	47.8	174.4	73.33
Gabon	29	182	*135*	..	8	0.5	7.5	0.01
Gambia, The	2	164	4	..	4	1.0	2.6	0.00
Georgia	..	553	*473*	*2.4*	6	*0.1*	..	1.16
Germany	311	946	570	210.5	99	68.1	255.5	140.58
Ghana	14	238	109	..	1	*0.3*	1.6	0.13
Greece	*153*	477	466	..	89	3.8	44.8	37.98
Guatemala	33	73	126	28.5	6	..	*3.0*	0.97
Guinea	..	47	41	0.0	0	0.1	0.3	0.00
Guinea-Bissau	5	43	..	..	0	*0.5*	..	0.11
Haiti	3	55	*5*	..	0	..	..	0.00
Honduras	55	409	*90*	*7.6*	2	..	..	0.17

The information age 5.11

	Daily newspapers	Radios	Television		Mobile phones	Fax machines	Personal computers	Internet hosts
			Sets	Cable subscribers				
	per 1,000 people **1996**	per 1,000 people **1996**	per 1,000 people **1997**	per 1,000 people **1997**	per 1,000 people **1997**	per 1,000 people **1996**	per 1,000 people **1997**	per 10,000 people **July 1998**
Hungary	186	697	436	146.1	69	11.8	49.0	73.14
India	..	105	69	18.8	1	*0.1*	2.1	0.11
Indonesia	14	155	134	..	5	*0.4*	8.0	0.52
Iran, Islamic Rep.	28	237	148	*0.0*	4	*0.5*	*32.7*	0.04
Iraq	19	228	*83*	..	*0*	..	..	0.00
Ireland	150	703	*455*	*147.4*	146	27.4	241.3	121.85
Israel	290	530	321	*160.1*	283	*24.9*	186.1	146.78
Italy	104	874	483	*0.0*	204	31.3	113.0	55.69
Jamaica	62	482	*323*	*73.0*	*22*	*0.6*	*4.6*	0.98
Japan	578	957	708	114.8	304	126.8	202.4	107.05
Jordan	58	287	43	0.1	*2*	6.3	8.7	0.79
Kazakhstan	31	384	*234*	..	*1*	0.2	..	0.89
Kenya	9	108	19	..	0	*0.1*	2.3	0.24
Korea, Dem. Rep.	199	147	..	..	*0*	*0.1*	..	..
Korea, Rep.	*393*	1,037	341	162.4	150	*8.9*	150.7	37.66
Kuwait	374	688	*491*	..	116	23.2	82.9	29.95
Kyrgyz Republic	15	115	44	..	*0*	..	..	0.39
Lao PDR	4	139	4	..	1	*0.1*	*1.1*	0.00
Latvia	247	699	*592*	48.4	31	*0.3*	*7.9*	33.28
Lebanon	107	892	354	1.4	135	..	31.8	3.33
Lesotho	8	48	*24*	..	*1*	*0.3*	..	0.08
Libya	14	232	*143*	*0.0*	*0*	..	..	0.00
Lithuania	93	292	*377*	*80.9*	41	1.7	*6.5*	23.65
Macedonia, FYR	19	184	*252*	..	6	1.5	..	2.02
Madagascar	5	192	*45*	..	0	..	1.3	0.01
Malawi	*3*	256	*2*	..	*0*	0.1	..	0.00
Malaysia	158	432	166	5.2	113	6.9	46.1	18.38
Mali	1	49	10	0.0	0	..	0.6	0.00
Mauritania	*0*	150	89	..	0	1.7	*5.3*	0.09
Mauritius	75	368	228	..	32	24.5	78.9	3.19
Mexico	97	324	251	*15.2*	18	3.0	37.3	8.75
Moldova	60	720	302	16.2	1	0.1	3.8	*0.39*
Mongolia	27	139	63	10.8	1	2.7	5.4	0.07
Morocco	26	241	160	*0.0*	3	0.6	2.5	0.17
Mozambique	3	39	*4*	..	0	*0.4*	1.6	0.05
Myanmar	10	89	*7*	*0.0*	0	0.0	..	0.00
Namibia	19	143	*32*	..	8	..	18.6	4.00
Nepal	11	37	*4*	*0.2*	0	*0.0*	..	0.05
Netherlands	177	963	541	*371.8*	110	38.2	280.3	327.85
New Zealand	223	1,027	*501*	..	149	*17.9*	263.9	468.39
Nicaragua	30	283	190	40.2	2	..	..	1.44
Niger	0	69	*26*	..	0	*0.0*	0.2	0.00
Nigeria	24	197	*61*	..	*0*	..	5.1	0.01
Norway	588	920	579	160.2	381	50.0	360.8	705.28
Oman	504	582	602	*0.0*	25	2.7	15.1	2.87
Pakistan	*21*	92	65	0.0	1	*1.2*	*4.5*	0.15
Panama	62	299	*187*	*11.4*	6	*0.0*	..	2.77
Papua New Guinea	15	91	24	..	*1*	*0.2*	..	0.13
Paraguay	43	182	*101*	*7.2*	17	*0.4*	..	1.64
Peru	84	271	143	13.8	18	*0.6*	12.3	1.52
Philippines	82	159	109	7.0	18	*0.7*	13.6	1.01
Poland	113	518	413	*70.5*	22	*1.4*	36.2	25.55
Portugal	75	306	523	38.5	152	7.0	74.4	45.34
Puerto Rico	126	715	*270*	..	*45*	..	..	0.32
Romania	..	317	*226*	*110.6*	9	*0.9*	8.9	6.09
Russian Federation	105	344	390	*78.4*	3	0.7	32.0	8.88

5.11 The information age

	Daily newspapers	Radios	Television		Mobile phones	Fax machines	Personal computers	Internet hosts
	per 1,000 people **1996**	per 1,000 people **1996**	Sets per 1,000 people **1997**	Cable subscribers per 1,000 people **1997**	per 1,000 people **1997**	per 1,000 people **1996**	per 1,000 people **1997**	per 10,000 people **July 1998**
Rwanda	*0*	102	..	..	0	*0.1*	..	0.00
Saudi Arabia	57	319	*260*	..	17	*8.2*	43.6	0.02
Senegal	5	141	*41*	..	1	..	11.4	0.21
Sierra Leone	4	251	20	0.0	0	0.4	..	0.00
Singapore	360	739	354	*17.3*	273	32.2	399.5	187.98
Slovak Republic	185	580	401	105.0	37	10.5	241.6	26.25
Slovenia	206	416	353	*110.8*	47	8.9	188.9	91.07
South Africa	32	316	125	..	37	3.5	41.6	34.02
Spain	99	328	506	*10.8*	110	17.8	122.1	61.90
Sri Lanka	29	210	91	0.0	6	..	4.1	0.31
Sudan	27	270	143	0.0	0	0.4	1.1	0.00
Sweden	446	907	531	218.1	358	50.9	350.3	429.86
Switzerland	330	969	536	*346.0*	147	29.2	394.9	289.32
Syrian Arab Republic	20	274	*68*	..	0	1.4	1.7	0.00
Tajikistan	20	..	281	..	0	0.3	..	0.09
Tanzania	4	278	21	0.0	1	..	1.6	0.04
Thailand	63	204	234	*3.5*	33	2.5	19.8	4.17
Togo	4	217	19	..	1	3.9	5.8	0.19
Trinidad and Tobago	120	517	*332*	..	14	1.9	*20.0*	11.62
Tunisia	31	218	182	..	1	3.3	8.6	0.06
Turkey	109	178	286	8.1	26	1.7	20.7	4.30
Turkmenistan	..	96	*175*	..	*0*	..	..	0.63
Uganda	2	123	*26*	..	0	0.2	1.4	0.02
Ukraine	54	872	493	15.8	1	0.0	*5.6*	2.64
United Arab Emirates	156	354	294	..	132	21.0	84.0	50.61
United Kingdom	332	1,445	641	40.2	151	33.8	242.4	0.01
United States	215	2,115	847	245.9	206	78.4	406.7	975.94
Uruguay	293	610	*242*	*21.9*	46	*3.4*	*21.9*	49.67
Uzbekistan	3	452	*273*	..	*0*	..	..	0.08
Venezuela	206	471	172	17.2	46	3.0	36.6	2.94
Vietnam	4	106	*180*	*0.0*	2	0.3	4.6	0.00
West Bank and Gaza	..	..	..	..	15	6.5	..	..
Yemen, Rep.	15	64	*273*	..	*1*	*0.2*	1.2	0.01
Yugoslavia, FR (Serb./Mont.)	110	143	*255*	..	8	1.4	..	4.95
Zambia	12	121	*80*	..	*0*	0.1	..	0.24
Zimbabwe	19	96	*29*	*0.0*	1	*0.4*	9.0	0.72
World	.. w	295 w	277 w	*55.4* w	40 w	*9.2* w	64.2 w	63.10 w
Low income	..	99	*57*	*12.1*	1	*0.2*	*2.2*	0.10
Middle income	..	244	256	*35.6*	15	*0.9*	15.8	3.96
Lower middle income	..	230	249	*37.4*	10	*0.4*	9.6	1.26
Upper middle income	92	*361*	283	*28.9*	34	*2.5*	36.5	14.51
Low & middle income	..	187	190	*27.5*	9	*0.6*	11.5	2.41
East Asia & Pacific	..	184	229	39.0	11	*0.4*	7.4	0.60
Europe & Central Asia	104	411	384	..	13	1.1	*17.7*	10.55
Latin America & Carib.	74	*398*	264	31.3	26	*1.9*	32.8	7.65
Middle East & N. Africa	37	*268*	*140*	..	6	*1.5*	*15.4*	0.23
South Asia	..	99	69	16.4	1	*0.2*	2.1	0.11
Sub-Saharan Africa	12	*196*	*44*	..	4	..	..	2.32
High income	287	..	647	*165.3*	189	*49.7*	264.4	374.89
Europe EMU	218	820	533	*132.3*	131	39.0	186.1	122.32

The information age 5.11

About the data

The table includes indicators that measure the penetration of the information economy—newspapers, radios, television sets, mobile phones, fax machines, personal computers, and Internet hosts. Other important indicators of information and communications technology—such as the use of teleconferencing or the use of the Internet in organizing and mobilizing conferences, distance education, and commercial transactions—are not collected systematically and so are not reported here.

Data on the number of daily newspapers in circulation and radio receivers in use are obtained from statistical surveys carried out by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). In some countries definitions, classifications, and methods of enumeration do not entirely conform to UNESCO standards. For example, newspaper circulation data should refer to the number of copies distributed, but in some cases the figures reported are the number of copies printed. In addition, many countries impose radio license fees to help pay for public broadcasting, discouraging radio owners from declaring ownership. Because of these and other data collection problems, estimates of the number of newspapers and radios vary widely in reliability and should be interpreted with caution.

Data presented for other electronic communications and information technology are from the International Telecommunication Union (ITU) and Network Wizards. Data on television sets and cable television subscribers are supplied to the ITU through annual questionnaires sent to national broadcasting authorities and industry associations. Some countries require that television sets be registered. To the extent that households do not register their televisions or do not register all of their televisions, the number of licensed sets may understate the true number.

Because of different regulatory requirements for the provision of data, complete measurement of the telecommunications sector is not possible. Telecommunications data are compiled through annual questionnaires sent to telecommunications authorities and operating companies. The data are supplemented by annual reports and statistical yearbooks of telecommunications ministries, regulators, operators, and industry associations. In some cases estimates are derived from ITU documents or other references.

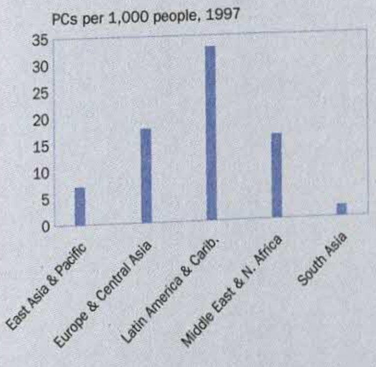
Data on fax machines exclude fax modems attached to computers. Some operators report only the equipment they sell, lease, or register, so the actual number is almost certainly much higher.

Estimates of the number of personal computers (PCs) are derived from an annual questionnaire, supplemented by other sources. In many countries mainframe computers are used extensively, and thousands of users can be connected to a single mainframe computer; thus the number of PCs understates the total use of computers.

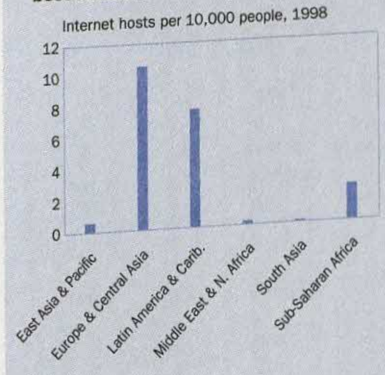
Internet hosts are computers connected directly to the worldwide network; many computer users can access the Internet through a single host. Hosts are assigned to countries on the basis of the host's country code, though this does not necessarily indicate that the host is physically located in that country. All hosts lacking a country code identification are assigned to the United States. Because Network Wizards changed the methods used in its Internet domain survey beginning in July 1998, the data shown here are not directly comparable with those published in last year's edition. The new survey is believed to be more reliable and to avoid the problem of undercounting that occurs when organizations restrict download access to their domain data. Nevertheless, some measurement problems remain, so the number of Internet hosts shown for each country should be considered an approximation.

Figure 5.11

Latin America ranks highest among developing regions in access to personal computers . . .



. . . but Europe and Central Asia has the best access to the Internet



Source: Table 5.11 based on ITU and Network Wizards data.

Definitions

- **Daily newspapers** are the number of newspapers published at least four times a week, per 1,000 people. • **Radios** are the estimated number of radio receivers in use for broadcasts to the general public, per 1,000 people. • **Television sets** are the estimated number of television sets in use, per 1,000 people. • **Mobile phones** refer to users of portable telephones subscribing to an automatic public mobile telephone service using cellular technology that provides access to the public switched telephone network, per 1,000 people. • **Fax machines** are the estimated number of facsimile machines connected to the public switched telephone network, per 1,000 people. • **Personal computers** are the estimated number of self-contained computers designed to be used by a single individual, per 1,000 people. • **Internet hosts** are the number of computers with active Internet Protocol (IP) addresses connected to the Internet, per 10,000 people. All hosts without a country code identification are assumed to be located in the United States.

Data sources

Data on newspapers and radios are from UNESCO, which compiles data mainly from official replies by member states to UNESCO questionnaires and special surveys, but also from official reports and publications, supplemented by information from national and international sources. Data on television sets, mobile phones, fax machines, and personal computers are from the annual questionnaire sent to member countries by the ITU. These data are reported in the ITU's *World Telecommunication Development Report* or Telecommunications Indicators database. The text also draws on ITU sources. Data on Internet hosts are from Network Wizards (http://www.nw.com).

5.12 Science and technology

	Scientists and engineers in R&D	Technicians in R&D	Expenditures for R&D	High-technology exports		Royalty and license fees				Patent applications filed[a]	
						Receipts $ millions		Payments $ millions			
	per million people 1985–95[b]	per million people 1985–95[b]	% of GNP 1985–95[b]	$ millions 1997	% of manufactured exports 1997	1990	1997	1990	1997	Residents 1996	Non-residents 1996
Albania	..	..	..	2	1	0	..	0	..	1	18,761
Algeria	..	..	..	87	22	0	..	1	..	48	150
Angola	..	..	..	..	..	0	*17*	0	*0*	..	..
Argentina	671	149	0.4	1,355	15	4	6	409	240	..	..
Armenia	..	..	..	..	..	..	..	..	..	162	20,268
Australia	3,166	792	1.7	6,415	39	162	295	826	1,074	9,196	34,125
Austria	1,631	814	1.5	*11,975*	*24*	91	185	287	691	2,506	75,985
Azerbaijan	..	..	..	..	..	..	..	..	..	165	16,470
Bangladesh	..	..	..	*7*	*0*	0	0	0	8	..	..
Belarus	2,339	308	1.1	..	..	..	2	..	2	701	20,347
Belgium	1,814	2,200	1.7	..	..	..	..	..	..	1,356	59,099
Benin	177	54	0.7	..	..	0	..	0	..	..	..
Bolivia	250	154	..	17	9	0	0	3	5	..	..
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..	3,056
Botswana	..	..	..	..	..	0	*0*	8	*6*	5	56
Brazil	168	59	0.6	5,175	18	12	*32*	54	*529*	2,655	29,451
Bulgaria	..	965	..	..	..	0	..	0	..	318	22,235
Burkina Faso	..	..	..	..	..	0	..	0	..	..	..
Burundi	32	31	0.3	..	..	0	0	0	0	1	4
Cambodia	..	..	..	..	..	..	..	..	..	..	..
Cameroon	..	..	..	*4*	*3*	1	*0*	0	*1*	..	..
Canada	2,656	1,073	1.6	33,068	25	..	..	..	..	3,316	45,938
Central African Republic	55	31	..	*0*	*0*	0	..	0	..	..	..
Chad	..	..	..	..	..	0	..	0	..	..	..
Chile	..	231	0.7	480	19	0	83	37	53	189	1,771
China	350	201	0.5	33,344	21	0	55	0	543	11,698	41,016
Hong Kong, China	98	105	0.3	7,392	29	..	..	..	..	41	2,059
Colombia	..	..	..	719	20	21	61	13	51	87	1,172
Congo, Dem. Rep.	..	..	..	..	..	..	..	..	..	2	27
Congo, Rep.	..	..	..	*5*	*16*	0	0	0	0	..	..
Costa Rica	..	..	0.2	*95*	*14*	1	3	9	25	..	..
Côte d'Ivoire	..	..	..	..	..	0	*0*	0	*3*	..	..
Croatia	1,978	696	1.2	562	19	..	..	..	..	259	356
Cuba	1,606	1,117	..	..	..	..	..	..	..	84	4,834
Czech Republic	1,159	695	1.2	2,528	13	..	34	..	78	623	24,856
Denmark	2,647	2,656	1.9	8,174	27	0	..	0	..	2,452	72,151
Dominican Republic	..	..	..	*450*	*23*	0	*0*	0	*11*	..	..
Ecuador	169	215	0.1	53	12	0	*0*	37	64	7	354
Egypt, Arab Rep.	458	340	0.5	112	7	0	54	0	365	504	706
El Salvador	19	299	..	82	16	0	0	1	0	..	..
Eritrea	..	..	..	..	..	..	..	..	..	..	..
Estonia	2,018	470	0.6	456	24	..	1	..	5	12	21,144
Ethiopia	..	..	..	*0*	*0*	0	0	0	0	3	..
Finland	2,812	2,005	2.5	8,797	26	50	93	317	504	3,262	61,556
France	2,584	2,874	2.4	*68,655*	*31*	1,295	2,046	1,629	2,476	17,090	81,418
Gabon	189	17	0.0	*20*	*32*	0	*0*	0	*0*	..	..
Gambia, The	..	..	..	..	..	0	..	0	..	..	54
Georgia	..	..	..	..	..	..	..	..	..	289	21,124
Germany	2,843	1,472	2.4	112,243	26	1,987	3,168	3,797	4,694	56,757	98,338
Ghana	..	..	..	..	..	..	..	0	*1*	..	33
Greece	774	314	0.6	686	12	0	0	15	58	434	52,371
Guatemala	99	107	1.1	94	13	0	..	0	..	2	102
Guinea	..	..	..	..	..	..	..	..	..	..	..
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..
Haiti	..	..	..	..	..	0	..	0	..	3	6
Honduras	..	..	..	12	4	0	0	3	5	10	126

Science and technology 5.12

	Scientists and engineers in R&D	Technicians in R&D	Expenditures for R&D	High-technology exports		Royalty and license fees				Patent applications filed[a]	
	per million people	per million people	% of GNP	$ millions	% of manufactured exports	Receipts $ millions		Payments $ millions		Residents	Non-residents
	1985–95[b]	1985–95[b]	1985–95[b]	1997	1997	1990	1997	1990	1997	1996	1996
Hungary	1,033	512	0.8	5,745	39	49	100	36	192	832	24,147
India	149	114	0.8	*2,654*	*11*	1	12	72	150	1,660	6,632
Indonesia	..	..	0.1	4,474	20	0	..	0	..	40	3,957
Iran, Islamic Rep.	521	154	0.5	..	..	0	*0*	0	*0*	..	..
Iraq	..	..	..	..	..	..	..	..	..	68	18
Ireland	1,871	510	1.4	26,467	62	38	110	591	4,140	925	52,407
Israel	..	..	2.2	6,870	33	63	187	73	183	1,363	12,172
Italy	1,325	800	1.1	32,747	15	1,040	490	1,959	1,004	8,860	71,992
Jamaica	8	6	0.0	*619*	*67*	3	7	7	28	..	..
Japan	6,309	828	2.9	152,431	38	*2,866*	7,303	*6,051*	9,620	340,861	60,390
Jordan	106	7	0.3	*183*	*26*	0	..	0	..	..	..
Kazakhstan	..	..	..	..	..	..	..	..	..	1,024	20,064
Kenya	..	..	..	52	11	9	4	6	39	15	39,034
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..	..	20,575
Korea, Rep.	2,636	317	2.8	*44,433*	*39*	37	252	1,364	2,413	68,446	45,548
Kuwait	..	..	..	76	4	..	..	..	..	..	..
Kyrgyz Republic	703	69	0.0	*47*	*24*	..	..	..	..	126	20,179
Lao PDR	..	..	..	..	..	0	..	0	..	..	..
Latvia	1,189	390	0.5	149	15	..	0	..	1	197	21,498
Lebanon	..	2	..	..	..	..	..	..	..	..	..
Lesotho	..	..	..	..	..	0	..	1	..	2	37,043
Libya	..	493	0.2	..	..	0	..	0	..	12	23
Lithuania	..	629	..	494	21	..	1	..	5	101	21,249
Macedonia, FYR	..	334	..	..	..	..	2	..	2	53	18,934
Madagascar	11	34	0.2	1	2	0	*1*	0	*3*	7	20,800
Malawi	..	..	..	*1*	*3*	0	..	0	..	3	39,031
Malaysia	87	88	0.4	*39,490*	*67*	0	0	0	0	..	..
Mali	..	..	..	..	..	0	..	0	..	..	..
Mauritania	..	..	..	..	..	0	*0*	0	*0*	..	..
Mauritius	361	158	0.4	20	2	0	0	0	0	3	19
Mexico	213	73	0.4	29,692	33	73	130	380	501	389	30,305
Moldova	1,539	224	0.7	*15*	*9*	..	0	..	0	290	20,245
Mongolia	943	182	0.0	*1*	*2*	0	..	0	..	114	20,882
Morocco	..	..	..	622	27	4	4	60	123	90	237
Mozambique	..	..	..	*3*	*8*	0	..	0	..	..	..
Myanmar	..	..	..	..	..	0	..	0	..	..	..
Namibia	..	..	..	..	..	1	0	2	4	..	..
Nepal	..	5	..	0	0	0	0	0	0	..	..
Netherlands	2,656	1,357	2.1	57,082	44	1,086	2,085	1,751	2,455	4,884	61,958
New Zealand	1,778	822	1.1	*428*	*11*	0	0	0	0	1,421	26,947
Nicaragua	214	89	..	61	38	0	..	0	..	..	..
Niger	..	..	..	..	..	..	..	0	*1*	..	..
Nigeria	15	69	0.1	..	..	0	*0*	0	*0*	..	..
Norway	3,678	1,859	1.8	*2,703*	*24*	133	85	148	336	1,550	25,628
Oman	..	..	..	157	12	0	..	0	..	..	..
Pakistan	54	76	0.9	281	4	0	2	0	19	16	782
Panama	..	..	0.0	16	14	..	..	9	15	31	142
Papua New Guinea	..	..	..	..	..	0	*0*	0	*0*	..	..
Paraguay	..	..	..	8	4	0	..	0	..	..	..
Peru	625	188	0.6	99	10	..	0	5	80	52	565
Philippines	157	22	0.2	6,249	56	1	18	38	158	163	2,634
Poland	1,299	510	0.7	2,235	12	0	27	0	175	2,414	24,902
Portugal	1,185	167	0.6	2,185	11	14	26	117	285	105	71,544
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..
Romania	1,382	579	0.7	479	7	0	0	0	29	1,831	22,139
Russian Federation	3,520	688	0.7	3,809	19	..	176	..	11	18,138	28,149

5.12 Science and technology

	Scientists and engineers in R&D	Technicians in R&D	Expenditures for R&D	High-technology exports		Royalty and license fees				Patent applications filed[a]	
	per million people	per million people	% of GNP	$ millions	% of manufactured exports	Receipts $ millions		Payments $ millions		Residents	Non-residents
	1985–95[b]	1985–95[b]	1985–95[b]	1997	1997	1990	1997	1990	1997	1996	1996
Rwanda	24	5	0.0	..	..	0	0	0	1	..	..
Saudi Arabia	..	..	..	*1,506*	*29*	0	0	0	0	27	810
Senegal	..	..	..	*145*	*55*	1	*1*	0	*0*	..	..
Sierra Leone	..	..	..	..	..	0	*0*	0	*0*	..	..
Singapore	2,728	353	1.1	74,585	71	..	..	..	..	215	38,403
Slovak Republic	1,821	765	1.0	1,040	15	..	17	..	85	201	22,865
Slovenia	2,544	1,134	1.7	1,231	16	..	5	..	52	301	21,686
South Africa	938	286	0.7	..	..	54	73	130	258	..	..
Spain	1,210	342	0.9	*13,452*	*17*	90	211	1,022	1,565	2,689	81,294
Sri Lanka	173	43	..	..	..	0	*0*	0	*0*	50	21,138
Sudan	..	..	..	*1*	*12*	0	0	0	0	..	39,061
Sweden	3,714	3,173	3.4	21,969	34	563	1,000	743	957	7,077	76,364
Switzerland	..	..	2.8	19,746	28	..	..	..	..	2,699	75,576
Syrian Arab Republic	..	..	..	*6*	*1*	0	..	0	..	..	..
Tajikistan	709	..	..	..	..	..	..	..	..	32	19,570
Tanzania	..	..	..	..	..	*0*	3	*0*	0	..	..
Thailand	119	40	0.1	17,758	43	0	44	170	804	203	4,355
Togo	..	..	..	..	..	0	..	0	..	..	..
Trinidad and Tobago	..	..	..	296	27	0	..	7	*0*	9	20,802
Tunisia	388	71	0.3	487	11	1	1	1	4	46	128
Turkey	261	26	0.6	1,787	9	..	..	..	..	367	19,668
Turkmenistan	..	..	..	..	..	..	..	..	..	66	18,948
Uganda	..	..	..	..	..	0	0	0	0	..	38,497
Ukraine	3,173	713	1.3	..	..	..	..	..	..	3,640	22,862
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	2,417	1,019	2.2	95,755	41	3,055	6,901	3,575	6,332	25,269	104,084
United States	3,732	..	2.5	*197,657*	*44*	16,635	33,676	3,136	9,411	111,883	111,536
Uruguay	688	..	..	83	8	0	0	0	7	25	182
Uzbekistan	1,760	313	..	..	..	..	..	..	..	914	21,088
Venezuela	208	32	0.5	249	10	..	..	..	0	182	1,822
Vietnam	308	..	0.4	..	..	..	..	..	..	37	22,206
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	..	..	*0*	*0*	..	..	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	..	400	..	226	16	..	..	..	..	575	234
Zambia	..	..	..	..	..	0	..	0	..	6	93
Zimbabwe	..	..	..	38	6	1	..	8	..	30	181

a. Other patent applications filed in 1996 include those filed under the auspices of the African Intellectual Property Organization (75 by residents, 20,863 by nonresidents), African Regional Industrial Property Organization (10 by residents, 20,347 by nonresidents), European Patent Office (38,546 by residents, 48,068 by nonresidents), and Eurasian Patent Organization (39 by residents, 18,055 by nonresidents). The original information was provided by the World Intellectual Property Organization (WIPO). The International Bureau of WIPO assumes no liability or responsibility with regard to the transformation of these data. b. Data are for the latest year available; see *Primary data documentation* for survey year.

Science and technology 5.12

About the data

Rapid progress in science and technology is changing the global economy and increasing the importance of knowledge as a factor of production. It is also driving rapid shifts in comparative advantage between countries. The table shows several key indicators that provide a partial picture of the "technological base": the availability of skilled human resources (scientists, engineers, and technicians employed in research and development, or R&D), the competitive edge countries enjoy in high-technology exports, sales and purchases of technology through royalties and licenses, and the number of patent applications filed.

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) collects data on scientific and technical workers and research and development expenditures from member states, mainly from official replies to UNESCO questionnaires and special surveys, as well as from official reports and publications, supplemented by information from other national and international sources. UNESCO reports either the stock of scientists, engineers, and technicians (all qualified persons in science, engineering, and technical positions on a given reference date) or the number of economically active persons (people engaged in or actively seeking work in any branch of the economy on a given date) qualified to be scientists, engineers, or technicians. Stock data generally come from censuses and are less timely than measures of the economically active population. UNESCO supplements these data with estimates of the number of qualified scientists and engineers by counting the number of people who have completed education at ISCED (International Standard Classification of Education) levels 6 and 7; qualified technicians are estimated using the number of people who have completed education at ISCED level 5. The data on scientists, engineers, and technicians, normally calculated in terms of full-time-equivalent staff, cannot take into account the considerable variations in quality of training and education.

Data on R&D expenditures may reflect differences in the tax treatment of such expenditures. In some countries they may also reflect large and possibly unproductive outlays by governments or state-owned research establishments.

High-technology exports are those produced by a country's 10 most R&D-intensive industries. Industry rankings are based on a methodology developed by Davis (1982). Using input-output techniques, Davis estimated the technology intensity for U.S. industries in terms of the R&D expenditures required to produce a certain manufactured good. This methodology takes into account direct R&D expenditures made by final producers as well as indirect R&D expenditures made by suppliers of intermediate goods used in producing the final good. Industries classified on the basis of the U.S. Standard Industrial Classification (SIC) were ranked according to their R&D intensity, and the top 10 SIC groups (three-digit classification) were designated as high-technology industries. The industry ranked tenth had an R&D intensity index 30 percent greater than that for the industry ranked eleventh and more than 100 percent greater than the average for manufacturing.

To translate Davis's industry classification into a definition of high-technology trade, Braga and Yeats (1992) used the concordance between the SIC grouping and the Standard International Trade Classification (SITC) revision 1 classification proposed by Hatter (1985). Because of the imperfect match between SIC and SITC codes, Hatter estimated high-technology weights (the share of U.S. high-technology imports and exports in each SITC group, based on 1975–77 U.S. trade data) to highlight the relative importance of high-technology products in SITC groups. In preparing the data on high-technology trade, Braga and Yeats considered only SITC groups (at a four-digit level) that had a high-technology weight above 50 percent. Examples of high-technology exports include aircraft, office machinery, pharmaceuticals, and scientific instruments. It is worth noting that this methodology rests on the somewhat unrealistic assumption that using U.S. input-output relations and trade patterns for high-technology production does not introduce a bias in the classification.

Most countries have adopted systems that protect patentable inventions. Under most legislation relating to inventions, to be protected by law ("patentable"), an idea must be new in the sense that it has not already been published or publicly used; it must be nonobvious ("involve an inventive step") in the sense that it would not have occurred to any specialist in the industrial field, had such a specialist been asked to find a solution to the problem; and it must be capable of industrial application in the sense that it can be industrially manufactured or used. The table shows data on patent applications filed by residents and nonresidents. The World Intellectual Property Organization (WIPO) estimates that at the end of 1996 about 3.8 million patents were in force in the world.

Definitions

• **Scientists and engineers in R&D** are people trained to work in any field of science who are engaged in professional R&D activity (including administrators). Most such jobs require completion of tertiary education. • **Technicians in R&D** are people engaged in professional R&D activity who have received vocational or technical training in any branch of knowledge or technology of a specified standard. Most of these jobs require three years beyond the first stage of secondary education. • **Expenditures for R&D** are current and capital expenditures (including overhead) on creative, systematic activity intended to increase the stock of knowledge and on the use of this knowledge to devise new applications. This includes fundamental and applied research and experimental development work leading to new devices, products, or processes. • **High-technology exports** are goods produced by industries (based on U.S. industry classifications) that rank among a country's top 10 in terms of R&D expenditures. Manufactured exports are commodities in the SITC revision 1, sections 5–9 (chemicals and related products, basic manufactures, manufactured articles, machinery and transport equipment, and other manufactured articles and goods not elsewhere classified), excluding division 68 (nonferrous metals). • **Royalty and license fees** are payments and receipts between residents and nonresidents for the authorized use of intangible, nonproduced, nonfinancial assets and proprietary rights (such as patents, copyrights, trademarks, industrial processes, and franchises) and for the use, through licensing agreements, of produced originals of prototypes (such as manuscripts and films). • **Patents** are documents, issued by a government office, that describe the invention and create a legal situation in which the patented invention can normally be exploited (made, used, sold, imported) only by, or with the authorization of, the patentee. The protection of inventions is limited in time (generally to 20 years from the filing date of the application for the grant of a patent). Information on patent applications filed is shown separately for residents and nonresidents of the country.

Data sources

Data on technical personnel and R&D expenditures are collected by UNESCO and published in its *Statistical Yearbook*. Information on high-technology exports are from the United Nations' COMTRADE database. Data on royalty and license fees are from the IMF's *Balance of Payments Statistics Yearbook*. Data on patents are from WIPO's *Industrial Property Statistics*.

GLOBAL LINKS

Globalization—the integration of trade, finance, people, and ideas in one global marketplace—increases the ability of firms to do business across national boundaries. The barriers to crossing those boundaries are coming down. And the costs of transport, computing, and communications are all plummeting—to small fractions of what they were a few decades ago. What once took days now takes hours, and what once took hours now takes minutes, even seconds. All this is opening new opportunities for people everywhere—opportunities to improve human welfare. But as recent collapses in East Asia, Russia, and Latin American show, globalization is far from risk-free.

Globalization increases the opportunities for people in poor countries to prosper, but ill-considered policies and weak institutions may expose them to greater risks, such as financial shocks transmitted across the world economy. The adjustments to globalization—like closing uncompetitive firms and transferring resources to newly profitable sectors—can be painful. The opening of labor markets and the free flow of information, which transfers knowledge and increases productivity, may also disrupt social and political institutions. But the alternative is not attractive: globalization has largely bypassed some countries, many of them in Africa, because of their domestic weakness, which isolates them from global markets, discourages investment, and limits the spread of innovation. Foreign aid by itself cannot correct these deficiencies (box 6a). The challenge is for developing countries to strengthen policies and institutions to make the most of globalization's opportunities while managing the risks.

Trade

The past half century has brought unprecedented prosperity and better living standards to most parts of the world. World GNP rose from $1.3 trillion in 1960 to $29 trillion in 1997. The liberalization and rapid expansion of trade have underpinned this remarkable achievement. Between 1987 and 1997 world trade nearly doubled, and the ratio of trade to GDP in purchasing power parity dollars rose from 20.6 to 29.6 percent. Trade in services is growing even faster, aided by the revolution in telecommunications and computers. World service exports, having more than tripled from $392 billion in 1980 to $1.4 trillion in 1997, now amount to a quarter of world merchandise exports (see table 4.7). Not all countries have integrated at the same pace, however. Growth in real volumes of trade ran below that of GDP in 44 of 93 developing countries in 1985–94, including many of the poorest.

Box 6a

The dependence on aid

Some of the poorest parts of the world, especially Sub-Saharan Africa, have been bypassed by the surge in private capital flows to developing countries in the 1990s. Political instability, weak institutions, and poor policies have deterred foreign investors. Private capital flows to developing countries passed $250 billion in 1997, compared with $66 billion of official aid (tables 6.7 and 6.10). But the private flows went largely to a handful of countries. The rest remain aid-dependent.

At one time aid was seen as a supplement to domestic savings—to raise investment. But it is now used widely to support current spending on education and health or emergency assistance. As a result, aid to many countries now exceeds 100 percent of gross domestic investment—in 1997 the ratio was 294 percent in Rwanda, 201 percent in Madagascar, and 198 percent in Guinea-Bissau (table 6.10).

The World Bank's latest study on aid effectiveness (1998a) shows that aid works only in countries with the right policies and institutions. Creating strong institutions and good policies is a long, difficult process that donors need to support. Once that process is established, private capital will flow into these countries, from nationals as well as foreigners, and reduce their dependence on aid.

Trade is good for economic welfare in several ways. It encourages specialization in line with a country's comparative advantage while broadening the set of opportunities available to consumers. It enhances efficiency by stimulating competition with the best in the world, and enables firms to reap economies of scale by catering to global demand.

Exports also facilitate the creation of specialized centers of production (such as the computer software industry in Bangalore, India) that can reap externalities arising from the clustering of innovators, skilled labor, and ancillary suppliers. And being in the global market is a powerful way of acquiring the latest knowledge about new ideas, technologies, and markets. Recent research shows a positive association between trade openness and economic growth.

But trade liberalization can entail costs. Uncompetitive industries will close down, causing unemployment and output losses in some sectors as labor and capital shifts to newly rising industries. The fiscal deficit may widen if import duty collections fall. Without adequate long-term financing, infant industries that could be viable in the long run may succumb to the pressure of international competition.

Global experience suggests, however, that fears about the costs of trade liberalization tend to be exaggerated. Major studies find no systematic link between trade liberalization and unemployment, which is often much smaller than expected (Harrison and Revenga 1995b; Papageorgiou, Choksi, and Michaely 1990). Moreover, the adverse effects on vulnerable groups can be mitigated by carefully designed social safety nets.

Another problem is that undertaking trade reforms in a poor macroeconomic policy environment can magnify the adjustment costs. Reform is less likely to succeed in countries with large fiscal deficits, high inflation, and unrealistic and volatile exchange rates (World Bank 1997d). Unreformed loss-making parastatal firms and weak financial sectors can also boost the adjustment costs. In a favorable policy environment, however, trade liberalization usually generates far more employment and revenue than are lost. On balance, then, the benefits of trade liberalization tend to greatly outweigh the risks. Those benefits should continue to rise because of falling import tariffs and the liberalization of trade in textiles, agriculture, and services now under way through the World Trade Organization (table 6.6).

Foreign direct investment

Foreign direct investment is often (but inadequately) called a capital flow. In fact, it is a package of capital, trade, technology, and managerial skills. Increasingly, foreign direct investment makes the globalization of production easier, separating production processes and locating them in different countries according to comparative advantage.

A third of the world's external trade is now the internal trade of multinational companies: parts of a car or computer can be manufactured in several countries and assembled in yet another. Falling transport and communications costs have aided this process. Sea freight rates fell 70 percent in real terms between 1980 and 1996. The cost of international phone calls in the 1990s has fallen by 4 percent a year in developing countries and 2 percent a year in industrial ones.

Foreign direct investment in developing countries was mainly in mineral extraction in the 19th century—creating development enclaves with few spillover effects. But most today is in manufacturing and services. Valuable intangible assets—technology, organizational skills, and research and marketing know-how—get transferred as part of foreign direct investment. Such knowledge often spills over from foreign ventures to the local economy. In Malaysia the local affiliate of Intel now subcontracts a range of activities to firms set up by its former engineers. Some studies suggest that foreign direct investment tends to encourage additional domestic investment: an increase of one dollar of foreign investment is associated with an additional $0.50–1.30 of domestic investment. Foreign direct investment in previously restricted areas such as banking can strengthen domestic management capacity and reduce vulnerability to financial crises.

Foreign direct investment is generally considered less volatile than other financial flows. That to East Asia declined only modestly during the crash in financial flows, mitigating the real economic adjustment. For all developing countries, the sum of inward and outward foreign direct investment as a share of GDP went from 0.2 percent in 1986 (PPP$) to 0.8 percent in 1996—still modest when compared with the 2.7 percent in high-income countries.

In past years many countries discouraged foreign direct investment on political grounds. Nationalists wished to build strong home-grown champions and feared foreign direct investment would erode sovereignty and local culture. Today such fears look vastly overblown. China and Singapore, which welcome foreign direct investment, are far stronger than Myanmar or the Democratic Republic of Korea.

Financial flows

Economic theory suggests that the international mobility of capital can bring several benefits. It enables capital to flow to areas with the highest returns. It facilitates portfolio diversification for both foreign investors and locals. And it helps improve the ability of individuals to smooth their consumption across time.

Evidence on the actual size of these benefits is quite limited, however, and tends to suggest that the gains may be relatively small. One study suggests that a 1.0 percentage point increase in the ratio of financial flows to GDP is associated with a 0.1 percentage point increase in the GDP growth rate, much less than the 0.3–0.4 percentage point for foreign direct investment (Wacziarg 1998).

Another study looking at 18 countries finds no significant association between financial inflows and the growth of total factor productivity (World Bank 1999a). A third study finds no significant association between open capital accounts and GDP growth (Rodrik forthcoming). One reason could be that recipient countries think it prudent to keep part of the inflows in reserves—to guard against a speculative attack. But the yields on reserves tend to be much lower than interest rates on inflows, creating social losses.

The benefits of greater international financial integration need to be weighed against its risks. These arise in part from imperfections in international capital markets that create the possibility of large, sudden swings from euphoria to panic. Reversals in flows can force huge, wrenching economic adjustments—as in East Asia, where financial sector regulation and supervision are weak and where local banks and firms are in poor financial condition (World Bank 1999a).

Recent research provides evidence for contagion—for the transmission of financial effects across countries more strongly than economic fundamentals alone can explain. Capital flow volatility is sometimes associated with volatility in international interest rates—and can increase the probability of a crisis (Frankel and Rose 1996; Kaminsky and Reinhart 1997). Even the withdrawal of sums that are small for overseas investors can have large, destabilizing effects in shallow emerging markets.

East Asia suggests that financial integration may not be the cause of financial crises—but that it can magnify the ill effects of domestic policy failings and institutional weaknesses. One lesson: developing countries need to proceed with capital account liberalization in a measured way after careful preparation. They need to create a framework of sound macroeconomic policies. They need to restructure weak financial systems and strengthen systems of financial supervision and regulation. They need to strengthen corporate governance. And they need to eliminate distortions (such as tax incentives) that encourage short-term flows.

Labor

Nations define themselves by citizenship. In theory, flows of labor could have the same efficiency effects as flows of goods or capital. But governments that espouse free flows of goods and investment often oppose free flows of labor, since they can raise serious questions of national identity.

Workers feel differently, with annual flows of temporary and permanent migrants ranging up to 3 million a year in recent years, mainly to OECD and OPEC countries. Most migrants have traditionally been laborers, but today they include skilled professionals, such as software developers. More than 120 million people now live in countries they were not born in, and their remittances back home are an important source of foreign exchange for many countries. Take India, which benefited from private current transfers in 1997 of $11.8 billion, more than its current account deficit of $5.8 billion (see table 4.17).

The revolution in telecommunications is now reducing the incentive to migrate. Some of the traditional benefits of migration can be realized without labor movement. Clerical jobs, like billing customers, can be done electronically in low-wage countries without the clerks moving to the countries where the customers are.

Knowledge

Knowledge can bridge gaps between rich and poor countries, helping developing countries accelerate their growth. But to enjoy these benefits, developing countries have to facilitate inflows of knowledge through open economic and political regimes—and they have to create skilled labor forces that can absorb and use global knowledge.

Ghana and the Republic of Korea had roughly the same income per capita in the 1950s, but Korea was six times better off by the 1990s. World Bank economists estimate that half the difference was Korea's greater success in using global knowledge.

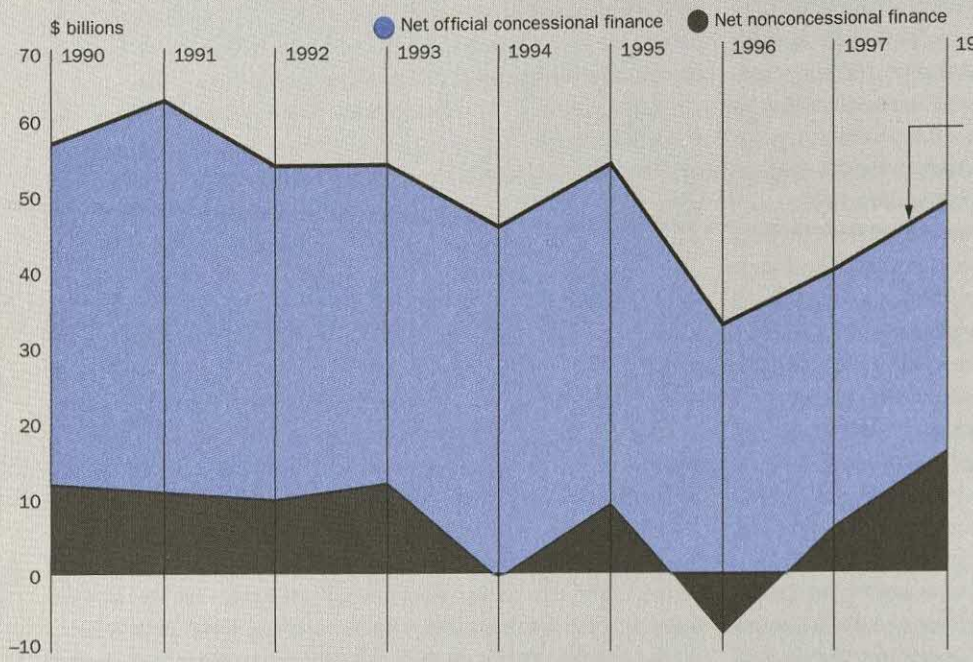
Knowledge travels in channels other than trade and foreign direct investment. International cooperation and the exchange of ideas, journals, and personnel transmit knowledge in every field. Knowledge of how to develop local high-yielding varieties has spread the green revolution. Knowledge of how to prevent and cure disease has greatly reduced infant mortality globally. Knowledge of how to operate microcredit schemes has empowered poor women across the world.

The communications and computer revolutions are greatly increasing the scope for global transmission of knowledge. Indeed, they can enable developing countries to leapfrog old technologies that still hold in industrial countries. The ratio of cellular to total phone use is much higher in the Philippines and Sri Lanka than in France or Belgium (see tables 5.10 and 5.11). Sub-Saharan African countries such as Botswana, Djibouti, and Ghana have 100 percent digital telephone networks, compared with the OECD average of less than 70 percent.

The globalization of knowledge carries risks, too. Technical assistance programs have often failed. Inappropriate technology is sometimes spread by donor-driven or government-driven programs, in isolation from what consumers want. Using local people to determine the suitability of new technology is vital. The selections by local women farmers of bean varieties for propagation in Rwanda outperformed selections by bean breeders by 60–90 percent (World Bank 1998e). The chances of success are greatest where the flow of technology responds to local demand—and is spread by commercial markets rather than subsidized agencies.

In sum: globalization is offering unprecedented opportunity to rich and poor, and countries have little choice but to develop the policies and capabilities that will allow them to jump onto the global bandwagon. If people use the new global economy merely to dump money into bad investments—if the lessons of 1997–98 do not result in better financial management—then more destructive shocks lie ahead.

Net official flows



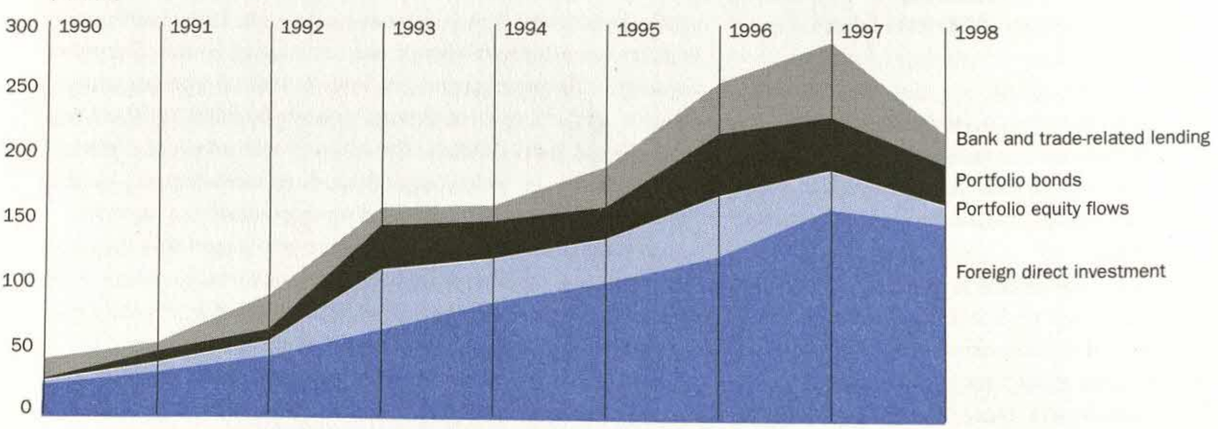
Note: Official concessional finance comprises inflows of official development assistance and official aid excluding technical cooperation. Nonconcessional finance comprises net flows from bilateral and multilateral sources.

Source: OECD and World Bank staff estimates.

GLOBAL LINKS

Foreign direct investment has been the most resilient component of private capital flows.

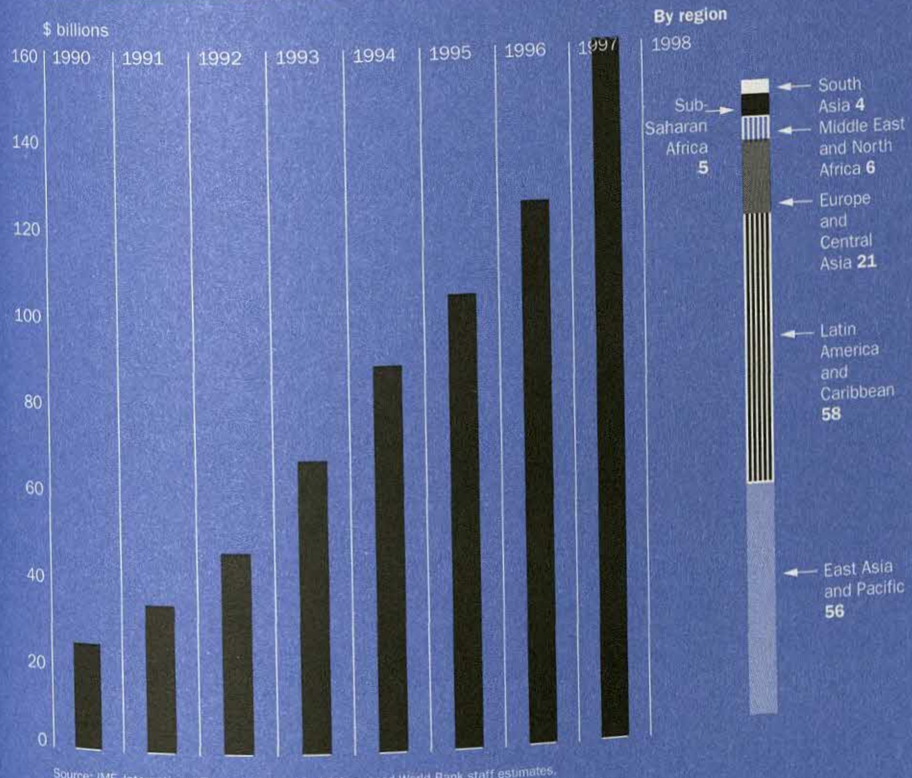
Private capital flows to developing economies



Source: World Bank, Debtor Reporting System.

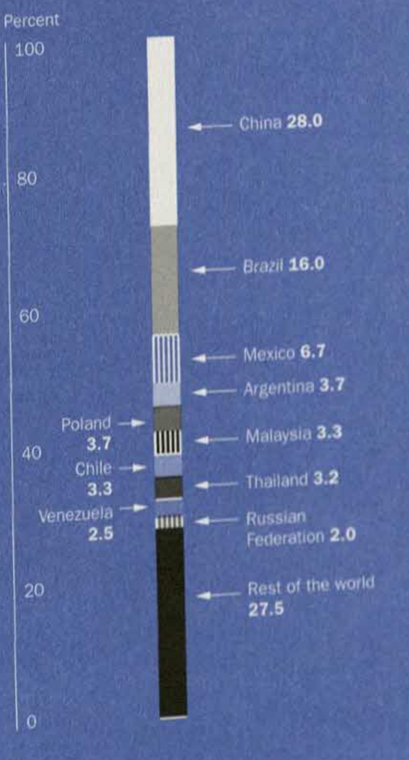
Private capital flows to developing countries fell sharply in 1998, with foreign direct investment holding up the best and official development finance rising to support countries hit hardest by the financial crisis.

Foreign direct investment to developing economies



Source: IMF, International Financial Statistics database and World Bank staff estimates.

Top 10 recipients of FDI, 1998



6.1 Integration with the global economy

	Trade in goods				Growth in real trade less growth in real GDP	Gross private capital flows		Gross foreign direct investment	
	% of PPP GDP		% of goods GDP		percentage points	% of PPP GDP		% of PPP GDP	
	1987	**1997**	**1987**	**1997**	**1987–97**	**1987**	**1997**	**1987**	**1997**
Albania	..	10.8	27.9	38.3	20.9	..	2.4	..	0.7
Algeria	16.0	17.4	37.8	71.2	–1.3	0.4	..	0.0	..
Angola	26.0	38.5	..	..	9.2	0.9	*4.2*	0.9	*1.0*
Argentina	5.5	15.1	23.8	33.8	9.2	1.0	6.5	0.5	1.8
Armenia	..	12.3	..	..	12.9	..	2.2	..	0.6
Australia	24.4	35.0	80.1	*116.8*	4.7	13.1	13.5	5.6	4.5
Austria	53.1	69.0	125.1	*153.8*	3.1	7.9	21.0	0.6	2.5
Azerbaijan	..	13.4	..	*93.2*	..	..	..	..	..
Bangladesh	5.7	8.3	32.1	50.7	7.5	0.1	0.3	0.0	0.1
Belarus	..	31.8	..	109.1	..	..	..	..	..
Belgium	..	..	..	..	3.0	..	..	..	..
Benin	11.5	16.6	65.1	109.1	–3.6	1.1	..	0.0	..
Bolivia	*8.5*	14.2	..	80.8	3.2	1.6	4.8	*0.5*	2.7
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..
Botswana	..	..	..	..	–3.8	8.4	*2.7*	2.4	*0.8*
Brazil	6.0	11.5	32.5	28.9	6.4	1.7	3.0	0.2	2.0
Bulgaria	20.7	24.6	37.3	134.3	–16.7	3.7	3.7	0.0	1.5
Burkina Faso	9.7	6.5	48.3	46.5	–2.8	1.0	..	0.0	..
Burundi	8.6	5.2	36.4	30.2	–1.6	0.7	0.6	0.0	0.0
Cambodia	0.4	12.8	4.3	86.8	..	..	2.1	..	1.5
Cameroon	10.1	12.2	36.4	54.1	1.2	4.6	*5.1*	0.5	*0.1*
Canada	44.0	62.9	109.5	..	4.8	8.5	13.9	3.7	3.8
Central African Republic	6.0	9.5	25.8	57.5	–0.3	1.5	..	0.4	..
Chad	5.4	3.4	35.3	26.5	–5.5	2.5	..	0.5	..
Chile	12.8	19.3	89.9	93.4	4.4	4.5	10.7	1.2	4.0
China	6.8	8.5	43.6	53.1	2.8	0.6	1.8	0.2	1.2
Hong Kong, China	125.0	250.4	596.6	..	8.2	..	..	..	..
Colombia	6.2	10.0	47.5	*55.0*	7.0	0.8	4.4	0.2	2.5
Congo, Dem. Rep.	3.2	5.7	40.4	51.0	–5.6	..	..	..	..
Congo, Rep.	33.3	64.5	93.0	185.1	1.4	9.8	5.2	1.4	0.0
Costa Rica	19.8	37.2	120.8	237.5	5.4	2.7	3.6	0.7	0.3
Côte d'Ivoire	32.8	28.0	103.5	147.2	1.0	2.8	4.3	0.5	1.3
Croatia	..	*53.9*	..	*132.2*	..	..	*12.6*	..	*1.5*
Cuba	..	..	..	..	..	..	..	..	..
Czech Republic	..	48.2	..	..	11.0	..	9.7	..	1.2
Denmark	62.1	74.5	114.0	*116.6*	2.3	17.6	38.1	0.9	5.2
Dominican Republic	11.2	30.5	127.8	177.3	10.7	0.6	*1.5*	0.4	*1.2*
Ecuador	12.8	18.4	84.4	116.4	2.1	3.3	2.1	0.4	1.0
Egypt, Arab Rep.	10.0	9.3	47.7	42.8	–0.6	2.8	4.1	1.0	0.6
El Salvador	17.8	32.7	86.1	122.6	6.6	0.7	1.4	0.3	0.0
Eritrea	..	..	..	..	..	..	..	..	..
Estonia	..	91.8	..	342.3	..	..	25.4	..	5.5
Ethiopia[a]	8.0	6.5	29.1	..	–1.4	0.3	1.4	0.0	0.0
Finland	56.2	66.7	94.8	*121.3*	3.2	17.2	27.2	2.0	8.2
France	36.2	43.9	93.2	*112.3*	2.7	12.8	12.1	1.7	4.5
Gabon	47.5	49.5	95.2	123.1	–0.2	12.3	*7.4*	2.2	*4.6*
Gambia, The	24.2	28.1	205.3	230.4	0.2	0.5	1.3	0.3	0.7
Georgia	..	10.9	..	38.9	..	..	..	..	..
Germany	..	54.3	..	*60.4*	..	..	25.4	..	2.2
Ghana	13.4	17.0	60.7	118.4	3.4	0.7	*1.3*	0.0	*0.4*
Greece	22.7	28.0	58.6	*55.0*	3.6	2.3	8.7	0.8	0.7
Guatemala	10.4	16.5	75.1	91.5	4.1	2.4	7.7	0.6	2.7
Guinea	13.7	13.5	72.5	75.6	–2.2	1.7	1.4	0.2	0.1
Guinea-Bissau	..	..	79.5	*89.7*	–3.9	..	..	..	..
Haiti	9.0	12.1	..	..	6.5	0.6	*0.1*	0.1	*0.0*
Honduras	20.2	50.7	77.6	*238.2*	–0.2	1.9	3.2	0.5	0.9

Integration with the global economy 6.1

	Trade in goods				Growth in real trade less growth in real GDP	Gross private capital flows		Gross foreign direct investment	
	% of PPP GDP		% of goods GDP		percentage points	% of PPP GDP		% of PPP GDP	
	1987	1997	1987	1997	1987–97	1987	1997	1987	1997
Hungary	30.1	55.2	112.1	181.4	3.8	0.3	11.6	0.0	3.4
India	3.9	4.1	16.7	*31.0*	3.5	0.2	1.2	0.0	0.2
Indonesia	11.1	13.7	66.4	75.9	1.9	0.6	2.1	0.1	0.7
Iran, Islamic Rep.	10.9	*9.5*	30.3	*57.6*	0.3	0.7	*0.8*	0.0	*0.0*
Iraq	..	..	..	..	..	..	..	..	..
Ireland	94.4	121.0	189.3	*238.1*	3.2	10.8	129.9	0.3	4.9
Israel	43.3	48.6	..	..	1.7	5.2	11.9	0.6	3.2
Italy	30.3	38.2	80.0	*107.3*	4.1	3.2	17.0	0.8	1.2
Jamaica	32.1	56.0	152.9	330.2	1.6	3.1	8.5	1.3	2.2
Japan	20.8	25.0	40.8	*46.5*	3.1	10.5	10.4	1.2	1.0
Jordan	37.0	34.5	133.8	190.8	6.5	1.6	2.5	0.4	2.4
Kazakhstan	..	18.9	..	115.4	..	..	..	..	..
Kenya	13.2	15.3	59.4	96.9	4.5	1.0	2.2	0.3	0.1
Korea, Dem. Rep.	..	..	..	..	..	..	..	..	..
Korea, Rep.	36.6	44.9	119.5	131.3	5.0	3.9	8.9	0.5	1.2
Kuwait	84.3	*66.7*	135.4	*134.4*	..	14.3	*15.0*	4.1	*3.6*
Kyrgyz Republic	..	12.1	..	101.9	..	..	*2.8*	..	*0.5*
Lao PDR	5.6	9.5	*42.4*	46.3	..	*1.5*	2.6	*0.1*	1.4
Latvia	..	45.3	..	..	5.8	..	17.9	..	3.8
Lebanon	*32.4*	33.2	..	*150.4*	..	..	..	..	..
Lesotho	..	..	..	..	–3.9	1.0	..	0.4	..
Libya	..	..	96.1	..	..	..	..	..	..
Lithuania	..	56.9	..	185.6	..	..	11.2	..	2.3
Macedonia, FYR	..	45.0	..	..	..	..	6.3	..	0.2
Madagascar	7.6	10.5	38.9	..	2.5	0.8	*2.4*	0.0	*0.1*
Malawi	16.0	20.0	71.8	99.5	1.0	0.4	..	0.0	..
Malaysia	49.4	90.0	176.7	271.4	7.6	2.5	6.2	0.7	2.9
Mali	12.8	18.2	44.6	80.7	0.3	0.3	1.0	0.1	0.5
Mauritania	32.6	26.4	140.6	175.6	–4.9	2.3	*11.6*	0.1	*0.2*
Mauritius	36.8	36.1	180.2	177.8	0.8	1.8	4.1	0.3	0.6
Mexico	7.3	29.3	55.4	144.8	9.2	2.7	3.8	0.6	1.6
Moldova	..	31.5	..	151.1	..	..	5.7	..	0.9
Mongolia	6.2	29.5	..	*142.1*	..	36.1	*1.6*	0.0	*0.3*
Morocco	13.3	13.9	72.8	77.2	4.0	0.9	1.8	0.1	1.2
Mozambique	15.7	11.9	73.6	89.1	–1.2	0.1	*0.7*	0.1	*0.7*
Myanmar	..	..	..	..	..	..	..	..	..
Namibia	..	..	..	..	–1.4	..	8.6	..	1.6
Nepal	5.2	4.1	30.4	30.5	8.0	0.7	0.4	0.0	0.1
Netherlands	92.0	113.4	221.5	*238.1*	1.9	24.8	52.8	5.8	8.8
New Zealand	33.4	43.6	106.2	..	3.2	10.0	4.6	4.1	3.1
Nicaragua	17.7	*20.3*	52.1	*163.3*	6.7	0.5	*3.0*	0.0	*1.1*
Niger	13.4	8.4	62.9	66.8	–4.4	0.9	*0.8*	0.4	*0.3*
Nigeria	20.5	21.0	68.1	70.8	–0.1	9.1	6.5	1.1	1.4
Norway	68.7	77.1	114.9	*116.4*	1.3	23.4	37.7	3.0	7.0
Oman	47.1	*43.9*	110.0	..	..	1.1	*0.7*	0.3	*0.2*
Pakistan	9.7	10.1	59.9	60.5	0.6	0.8	1.8	0.1	0.4
Panama	14.0	*27.2*	107.8	*254.4*	0.7	157.8	*42.9*	4.9	*1.5*
Papua New Guinea	..	..	123.2	153.9	0.6	..	..	..	..
Paraguay	8.5	27.3	51.6	*94.3*	10.8	2.9	..	0.0	..
Peru	7.6	13.8	*47.4*	56.9	4.2	0.7	5.4	0.1	1.8
Philippines	8.8	30.8	65.2	190.7	7.4	1.4	3.4	0.2	0.5
Poland	13.9	27.0	58.7	*96.2*	9.3	5.3	4.2	0.0	2.0
Portugal	29.0	41.1	125.6	*136.2*	4.6	3.8	21.4	0.6	2.4
Puerto Rico	..	..	..	..	..	..	..	..	..
Romania	20.8	20.1	76.1	83.6	4.6	1.9	2.9	0.0	1.3
Russian Federation	..	21.3	..	64.4	7.4	..	4.3	..	1.4

6.1 Integration with the global economy

	Trade in goods				Growth in real trade less growth in real GDP	Gross private capital flows		Gross foreign direct investment	
	% of PPP GDP		% of goods GDP		percentage points	% of PPP GDP		% of PPP GDP	
	1987	1997	1987	1997	1987–97	1987	1997	1987	1997
Rwanda	9.7	9.0	35.3	39.0	4.2	0.7	0.1	0.3	0.0
Saudi Arabia	36.1	50.3	113.8	..	..	19.5	7.4	1.0	1.3
Senegal	20.7	10.5	108.4	86.6	–1.4	2.4	*1.4*	0.3	*0.4*
Sierra Leone	12.3	23.1	45.9	76.1	7.7	3.7	*1.6*	1.9	*0.3*
Singapore	200.7	290.7	783.0	753.9	4.9	24.1	109.3	10.0	14.3
Slovak Republic	..	51.4	..	260.8	9.0	..	10.3	..	0.6
Slovenia	..	75.6	..	189.7	–1.7	..	7.6	..	1.5
South Africa	17.6	20.8	86.1	97.7	4.2	1.2	8.1	0.1	1.4
Spain	21.3	36.2	69.9	*44.7*	5.7	4.4	17.1	1.4	2.7
Sri Lanka	14.5	21.6	86.2	121.5	2.5	3.1	5.2	0.3	1.0
Sudan	7.5	4.6	14.8	..	..	0.5	0.5	0.0	0.2
Sweden	66.9	84.6	126.3	..	3.0	13.8	39.4	4.3	12.2
Switzerland	75.7	84.7	..	..	1.2	36.9	*89.6*	4.0	*9.2*
Syrian Arab Republic	17.0	20.5	75.4	..	0.4	0.7	4.6	0.0	0.2
Tajikistan	..	*22.1*	..	..	..	..	..	..	..
Tanzania	*9.1*	14.8	*28.8*	*59.1*	2.4	*0.0*	1.7	*0.0*	0.9
Thailand	16.9	29.7	99.0	153.2	6.0	1.5	5.6	0.4	1.0
Togo	16.2	22.6	100.4	158.2	–5.8	2.7	..	0.2	..
Trinidad and Tobago	40.7	59.8	134.1	191.4	–2.4	2.6	*9.2*	0.6	*3.6*
Tunisia	19.0	25.7	87.9	122.3	1.3	1.8	3.8	0.4	0.7
Turkey	11.5	18.5	52.7	79.6	6.1	1.3	3.5	0.1	0.3
Turkmenistan	..	*31.8*	..	..	..	..	*1.8*	..	*1.1*
Uganda	8.5	6.0	19.1	33.3	1.0	0.5	0.9	0.0	0.7
Ukraine	..	38.8	..	149.9	7.8	..	3.7	..	0.6
United Arab Emirates	65.6	*106.2*	150.8	..	..	..	..	..	..
United Kingdom	35.5	47.6	92.5	*81.2*	2.5	24.7	53.5	5.9	8.0
United States	14.0	20.4	50.3	*75.3*	4.6	6.8	14.5	2.1	2.9
Uruguay	12.8	21.5	64.3	99.9	6.2	4.2	6.3	0.3	0.5
Uzbekistan	..	*13.2*	..	49.0	..	..	..	..	..
Venezuela	15.7	20.6	86.4	*85.5*	2.6	3.9	8.0	0.0	2.9
Vietnam	*9.5*	18.7	13.3	..	20.0	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..
Yemen, Rep.	..	33.1	..	124.0	0.5	..	5.2	..	1.1
Yugoslavia, FR (Serb./Mont.)	..	..	..	..	..	..	..	..	..
Zambia	23.0	24.6	100.6	96.6	–1.2	6.1	..	1.2	..
Zimbabwe	14.6	19.9	65.8	117.5	6.7	1.2	..	0.2	..
World	**20.6 w**	**29.6 w**	**68.2 w**	***77.6* w**	..	**7.0 w**	**12.7 w**	**1.5 w**	**2.4 w**
Low income	7.0	8.4	31.3	52.0	..	1.1	1.5	0.1	0.3
Middle income	10.3	18.6	53.8	80.0	..	2.3	3.7	0.3	1.4
Lower middle income	8.9	14.4	47.8	78.9	..	1.6	2.8	0.3	1.2
Upper middle income	12.0	26.0	59.4	81.2	..	3.1	5.4	0.3	1.8
Low & middle income	9.7	16.7	49.5	79.6	..	2.1	3.4	0.3	1.2
East Asia & Pacific	9.8	14.6	61.2	89.9	..	0.9	2.3	0.3	1.2
Europe & Central Asia	8.2	26.6	35.2	89.0	..	2.6	5.0	0.0	1.2
Latin America & Carib.	8.0	18.5	47.7	66.3	..	2.9	4.7	0.4	2.0
Middle East & N. Africa	19.0	26.1	63.8	72.0	..	4.6	5.2	0.4	0.9
South Asia	4.9	5.4	23.8	*39.6*	..	0.4	1.3	0.0	0.2
Sub-Saharan Africa	15.6	17.8	67.6	94.4	..	2.5	5.6	0.4	1.0
High income	27.4	38.7	72.5	*78.7*	..	9.9	19.1	2.2	3.1
Europe EMU	38.3	51.3	101.2	*86.3*	..	9.0	22.5	1.6	3.1

a. Data prior to 1992 include Eritrea.

Integration with the global economy 6.1

About the data

The growing importance of trade in the world's economies is one indication of increasing global economic integration. Another is the increased size and importance of private capital flows to developing countries that have liberalized their financial markets. The indicators in the table highlight key features of the ongoing expansion of global markets in goods and capital. For three of the indicators GDP measured in purchasing power parity (PPP) terms has been used in the denominator to adjust for differences in domestic prices. (No adjustment has been made to the numerators because goods and capital exchanged on international markets are assumed to be valued at international prices.) This is a conservative measure: because the GDP of many developing countries is larger in PPP terms than when converted at official exchange rates, the resulting ratios tend to be lower. Still, there is ample evidence of the increasing importance of trade and international capital flows.

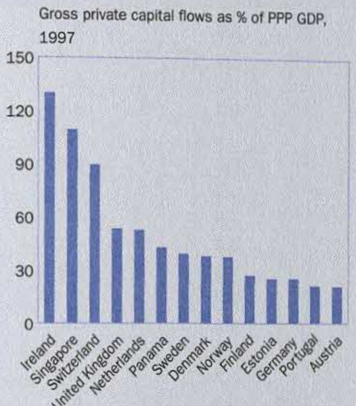
The growth of services has also affected the historical record. Compared with the levels achieved at the end of the last century, trade in goods appears to have declined in importance relative to GDP, especially in economies with growing service sectors. Deducting value added by services from GDP thus provides a better measure of the relative size of merchandise trade than physical output, although it neglects the growing services component of most goods output.

Trade in services, traditionally called invisibles, is becoming an important element of global integration. The difference between the growth of real trade in goods and services and the growth of GDP helps to identify economies with dynamic trade regimes.

In the financial account of the balance of payments inward investment is recorded as a credit and outward investment as a debit. Thus net flows, the sum of credits and debits, represent a balance in which many transactions are canceled out. Gross flows are a better measure of integration because they show the total value of financial transactions during a given period. The investment indicators in the table were constructed from data recorded at the most detailed level available. Higher-level aggregates tend to be affected by the netting out of credits and debits and so produce a smaller total. The comparability of these indicators between countries and over time is affected by the accuracy and completeness of balance of payments records and by their level of detail.

Figure 6.1

Large capital flows relative to GDP reflect extensive integration with global capital markets



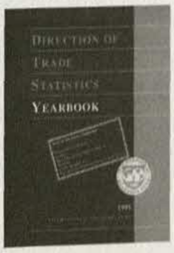
Source: Table 6.1.

The figure shows the countries whose gross private capital flows exceeded 20 percent of PPP GDP in 1997.

Definitions

- **Trade in goods as a share of PPP GDP** is the sum of merchandise exports and imports measured in current U.S. dollars divided by the value of GDP converted to international dollars using purchasing power parity conversion factors. • **Trade in goods as a share of goods GDP** is the sum of merchandise exports and imports divided by the current value of GDP in U.S. dollars after subtracting value added in services. • **Growth in real trade less growth in real GDP** is the difference between annual growth in trade of goods and services and growth in GDP. Growth rates are calculated using constant price series taken from national accounts, expressed in percentages. • **Gross private capital flows** are the sum of the absolute values of direct, portfolio, and other investment inflows and outflows recorded in the balance of payments financial account, excluding changes in the assets and liabilities of monetary authorities and general government. The indicator is calculated as a ratio to GDP converted to international dollars using purchasing power parities. • **Gross foreign direct investment** is the sum of the absolute values of inflows and outflows of foreign direct investment recorded in the balance of payments financial account. It includes equity capital, reinvestment of earnings, other long-term capital, and short-term capital. Note that this indicator differs from the standard measure of foreign direct investment (see table 6.7), which captures only inward investment. The indicator is calculated as a ratio to GDP converted to international dollars using purchasing power parities.

Data sources


Direction of Trade Statistics Yearbook

Data on merchandise trade are from the International Monetary Fund's (IMF) Direction of Trade database. Data on GDP in PPP terms come from the World Bank's International Comparison Programme database. Data on real trade and GDP growth come from the World Bank's national accounts files. Gross private capital flows and foreign direct investment were calculated from the IMF's Balance of Payments database.

6.2 Direction and growth of merchandise trade

High-income importers

Direction of trade % of world trade, 1997	United States	European Union	Japan	Other industrial	All industrial	Other high income	All high income
Source of exports							
High-income economies	10.7	29.7	3.5	8.3	52.2	7.8	60.0
Industrial economies	8.4	28.2	2.4	7.9	46.8	5.8	52.7
United States		2.5	1.2	3.1	6.8	1.6	8.4
European Union	2.8	21.1	0.7	4.1	28.7	1.8	30.5
Japan	2.1	1.2		0.3	3.6	1.9	5.5
Other industrial economies	3.5	3.4	0.5	0.4	7.7	0.5	8.2
Other high-income economies	2.2	1.6	1.1	0.4	5.4	2.0	7.3
Low- & middle-income economies	4.8	5.4	2.0	0.7	12.9	3.1	16.0
Sub-Saharan Africa	0.3	0.5	0.0	0.1	0.9	0.1	1.0
East Asia & Pacific	1.4	1.1	1.3	0.3	4.0	2.2	6.2
South Asia	0.2	0.2	0.0	0.0	0.5	0.1	0.6
Europe & Central Asia	0.2	2.0	0.1	0.1	2.5	0.2	2.6
Middle East & N. Africa	0.2	0.8	0.4	0.1	1.5	0.4	1.9
Latin America & Caribbean	2.5	0.7	0.2	0.2	3.6	0.1	3.7
World	15.5	35.1	5.4	9.1	65.1	10.9	76.0

Low- and middle-income importers

Direction of trade % of world trade, 1997	Sub-Saharan Africa	East Asia & Pacific	South Asia	Europe & Central Asia	Middle East & N. Africa	Latin America & Caribbean	All low & middle income	World
Source of exports								
High-income economies	0.9	6.3	0.8	3.8	1.8	4.2	17.7	77.7
Industrial economies	0.8	3.4	0.5	3.5	1.6	3.9	13.7	66.3
United States	0.1	0.8	0.1	0.2	0.3	2.4	3.9	12.3
European Union	0.5	1.0	0.3	3.0	1.1	1.0	6.9	37.4
Japan	0.1	1.3	0.1	0.1	0.1	0.4	2.0	7.5
Other industrial economies	0.1	0.3	0.1	0.2	0.1	0.2	0.9	9.1
Other high-income economies	0.2	2.8	0.3	0.3	0.2	0.4	4.1	11.4
Low- & middle-income economies	0.4	1.5	0.3	2.0	0.6	1.4	6.2	22.3
Sub-Saharan Africa	0.2	0.1	0.0	0.0	0.0	0.0	0.4	1.4
East Asia & Pacific	0.1	0.8	0.1	0.1	0.1	0.1	1.4	8.5
South Asia	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.8
Europe & Central Asia	0.0	0.1	0.0	1.7	0.1	0.1	2.1	4.7
Middle East & N. Africa	0.1	0.3	0.1	0.0	0.2	0.1	0.7	2.6
Latin America & Caribbean	0.0	0.1	0.0	0.1	0.1	1.1	1.4	5.1
World	1.3	7.8	1.1	5.8	2.3	5.6	24.0	100.0

Direction and growth of merchandise trade 6.2

High-income importers

Nominal growth of trade annual % growth, 1987–97	United States	European Union	Japan	Other industrial	All industrial	Other high income	All high income
Source of exports							
High-income economies	6.4	6.7	8.2	9.9	7.2	12.7	7.7
Industrial economies	6.3	6.5	8.1	9.9	7.1	11.5	7.5
United States		8.4	8.8	9.5	9.0	12.2	9.5
European Union	5.9	5.8	9.1	11.1	6.5	13.1	6.8
Japan	3.4	4.5		2.2	3.6	9.6	5.3
Other industrial economies	9.2	12.2	5.3	12.1	10.2	12.3	10.3
Other high-income economies	6.6	9.9	8.5	9.0	8.0	17.3	9.8
Low- & middle-income economies	13.5	8.6	10.1	12.4	10.6	15.5	11.4
Sub-Saharan Africa	7.3	4.6	1.7	3.3	5.1	16.5	5.7
East Asia & Pacific	18.5	16.3	12.7	16.3	15.6	16.1	15.8
South Asia	12.4	10.5	3.2	9.3	10.1	15.4	11.0
Europe & Central Asia	13.0	10.2	3.4	13.2	10.3	22.0	10.7
Middle East & N. Africa	4.3	3.8	8.4	10.8	5.1	11.5	6.1
Latin America & Caribbean	13.9	6.3	7.0	12.3	11.5	13.9	11.5
World	8.1	7.0	8.9	10.0	7.8	13.4	8.4

Low- and middle-income importers

Nominal growth of trade annual % growth, 1987–97	Sub-Saharan Africa	East Asia & Pacific	South Asia	Europe & Central Asia	Middle East & N. Africa	Latin America & Caribbean	All low & middle income	World
Source of exports								
High-income economies	3.7	16.5	6.9	13.3	4.6	12.4	11.6	8.5
Industrial economies	2.8	14.3	4.9	13.0	4.6	12.1	10.4	8.0
United States	7.0	16.4	7.7	10.3	6.8	14.4	13.1	10.5
European Union	2.6	13.9	4.7	14.3	4.7	9.7	9.7	7.3
Japan	−1.9	14.3	0.3	1.4	1.0	9.5	9.3	6.2
Other industrial economies	6.9	11.5	9.1	6.8	4.2	6.5	8.0	10.1
Other high-income economies	9.7	20.1	12.6	18.4	4.9	18.2	17.4	11.9
Low- & middle-income economies	11.7	16.7	10.1	7.1	3.9	14.5	10.2	11.1
Sub-Saharan Africa	12.4	13.2	23.0	6.1	13.6	10.3	12.3	7.1
East Asia & Pacific	11.0	18.5	14.0	7.5	5.6	27.2	14.7	15.6
South Asia	14.3	17.8	11.3	-1.5	6.0	31.8	8.5	10.3
Europe & Central Asia	1.2	8.1	−1.4	8.6	1.0	10.9	7.5	9.2
Middle East & N. Africa	19.2	20.6	10.0	−18.7	3.2	−1.4	6.6	6.2
Latin America & Caribbean	7.9	15.1	9.9	3.9	7.2	15.7	13.6	12.1
World	5.6	16.6	7.8	10.7	4.4	12.9	11.2	9.0

6.2 Direction and growth of merchandise trade

About the data

Most industrial countries and about 22 developing countries report their trade data to the International Monetary Fund (IMF) each month. Together these countries account for about 80 percent of world exports. Trade from less timely reporters and from countries that do not report at all is estimated using reports of partner countries. Because the largest exporting and importing countries are reliable reporters, a large portion of the missing trade flows can be estimated from partner reports. Even so, a small amount of trade between developing countries, particularly in Africa, is not captured in partner data. Inter-European trade estimates have been significantly affected by changes in reporting methods following the creation of a customs union.

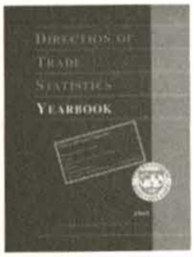
Most countries report their trade data in national currencies, which are converted using the IMF's published exchange rate series rf (official rate, period average) or rh (market rate, period average). Because imports are reported at c.i.f. (cost, insurance, and freight) valuations and exports are reported at f.o.b. (free on board) valuations, the IMF divides partner country reports of import values by 1.10 to estimate equivalent export values. This approximation is more or less accurate, depending on the set of partners and the items traded. Other factors affecting the accuracy of trade data include lags in reporting, recording differences across countries, and whether the country follows the general or special system of trade. (See *About the data* for tables 4.5 and 4.6 for further discussion of the measurement of exports and imports.)

The regional trade flows shown in this table were calculated from current price values. Growth rates therefore include the effects of changes in both volumes and prices.

Definitions

- **Merchandise trade** includes all trade in goods. Trade in services is not included. • **Regional groupings** are based on World Bank definitions and may differ from those used by other organizations. • **European Union** comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. • **Other industrial economies** include Australia, Canada, Iceland, New Zealand, Norway, and Switzerland. • **Other high-income economies** include Cyprus, Hong Kong (China), Israel, the Republic of Korea, Kuwait, Qatar, Singapore, Taiwan (China), and the United Arab Emirates. Some small high-income economies such as Aruba, the Bahamas, and Bermuda have been included in the Latin America and Caribbean group.

Data sources



Intercountry trade flows are published in the IMF's *Direction of Trade Statistics Yearbook* and *Direction of Trade Statistics Quarterly*; the data in the table were calculated using the IMF's Direction of Trade database.

OECD trade with low- and middle-income economies 6.3

Exports to low- and middle-income economies	High-income OECD countries		European Union		United States		Japan	
	1990	1997	1990	1997	1990	1997	1990	1997
$ billions								
Food	32.7	59.1	16.1	28.4	10.2	19.5	0.3	0.4
Cereals	13.2	14.6	4.2	5.3	5.5	6.2	0.1	0.0
Agricultural raw materials	8.8	15.4	3.1	4.5	3.5	5.5	0.6	1.1
Ores and nonferrous metals	7.2	13.7	2.8	5.5	2.1	3.2	0.5	1.4
Fuels	6.7	16.6	2.6	6.2	2.6	4.9	0.3	1.1
Crude petroleum	0.3	0.9	0.0	0.3	0.0	0.1	0.0	0.0
Petroleum products	4.7	12.2	2.4	5.5	1.7	3.6	0.2	1.0
Manufactured goods	286.1	638.0	145.4	292.5	64.2	164.7	53.0	104.6
Chemical products	41.3	81.7	22.9	42.1	10.4	21.1	3.6	7.1
Mach. and transport equip.	163.1	378.5	78.1	160.3	39.3	103.8	35.0	74.0
Other	81.7	177.5	44.4	90.3	14.5	39.8	14.5	23.5
Miscellaneous goods	10.3	26.8	3.5	11.3	4.3	8.2	0.5	1.7
Total	**351.7**	**769.6**	**173.5**	**348.4**	**86.9**	**206.1**	**55.2**	**110.4**
% of total exports								
Food	9.3	7.7	9.3	8.2	11.7	9.5	0.6	0.4
Cereals	3.8	1.9	2.4	1.5	6.3	3.0	0.1	0.0
Agricultural raw materials	2.5	2.0	1.8	1.3	4.1	2.7	1.0	1.0
Ores and nonferrous metals	2.0	1.8	1.6	1.6	2.4	1.5	0.9	1.3
Fuels	1.9	2.2	1.5	1.8	3.0	2.4	0.5	1.0
Crude petroleum	0.1	0.1	0.0	0.1	0.0	0.1	n.a.	0.0
Petroleum products	1.3	1.6	1.4	1.6	2.0	1.7	0.4	0.9
Manufactured goods	81.3	82.9	83.8	84.0	73.9	79.9	96.1	94.7
Chemical products	11.7	10.6	13.2	12.1	12.0	10.2	6.4	6.4
Mach. and transport equip.	46.4	49.2	45.0	46.0	45.2	50.4	63.4	67.1
Other	23.2	23.1	25.6	25.9	16.6	19.3	26.2	21.3
Miscellaneous goods	2.9	3.5	2.0	3.2	5.0	4.0	0.9	1.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

6.3 OECD trade with low- and middle-income economies

Imports from low- and middle-income economies	High-income OECD countries		European Union		United States		Japan	
	1990	1997	1990	1997	1990	1997	1990	1997
$ billions								
Food	63.8	95.3	34.9	42.5	15.4	23.7	9.4	18.4
Cereals	1.3	2.3	0.5	0.8	0.2	0.6	0.5	0.4
Agricultural raw materials	18.6	26.4	9.9	12.4	2.3	4.5	4.7	5.9
Ores and nonferrous metals	31.1	46.8	15.0	20.2	5.1	8.1	8.9	11.6
Fuels	149.1	166.5	58.6	55.4	48.7	53.4	33.1	31.8
Crude petroleum	111.1	121.7	46.6	38.8	37.3	43.8	20.8	19.5
Petroleum products	23.8	22.8	6.2	8.4	10.8	8.7	5.4	2.9
Manufactured goods	174.8	513.9	76.9	178.5	66.7	221.9	15.4	59.7
Chemical products	14.0	29.6	7.8	13.4	2.7	7.8	1.7	3.5
Mach. and transport equip.	46.9	187.0	15.0	54.0	24.8	96.6	2.0	18.3
Other	113.9	296.9	54.1	111.2	39.1	117.6	11.7	37.9
Miscellaneous goods	5.2	11.5	2.0	4.0	2.5	6.0	0.5	1.2
Total	**442.6**	**860.5**	**197.3**	**312.8**	**140.6**	**317.6**	**71.9**	**128.5**
% of total exports								
Food	14.4	11.1	17.7	13.6	10.9	7.5	13.1	14.3
Cereals	0.3	0.3	0.3	0.2	0.1	0.2	0.7	0.3
Agricultural raw materials	4.2	3.1	5.0	4.0	1.6	1.4	6.6	4.6
Ores and nonferrous metals	7.0	5.4	7.6	6.4	3.6	2.6	12.3	9.0
Fuels	33.7	19.3	29.7	17.7	34.7	16.8	46.0	24.7
Crude petroleum	25.1	14.1	23.6	12.4	26.5	13.8	28.9	15.2
Petroleum products	5.4	2.6	3.1	2.7	7.7	2.7	7.5	2.3
Manufactured goods	39.5	59.7	39.0	57.0	47.4	69.9	21.5	46.5
Chemical products	3.2	3.4	3.9	4.3	2.0	2.5	2.4	2.7
Mach. and transport equip.	10.6	21.7	7.6	17.3	17.7	30.4	2.7	14.2
Other	25.7	34.5	27.4	35.5	27.8	37.0	16.3	29.5
Miscellaneous goods	1.2	1.3	1.0	1.3	1.8	1.9	0.6	0.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

OECD trade with low- and middle-income economies 6.3

About the data

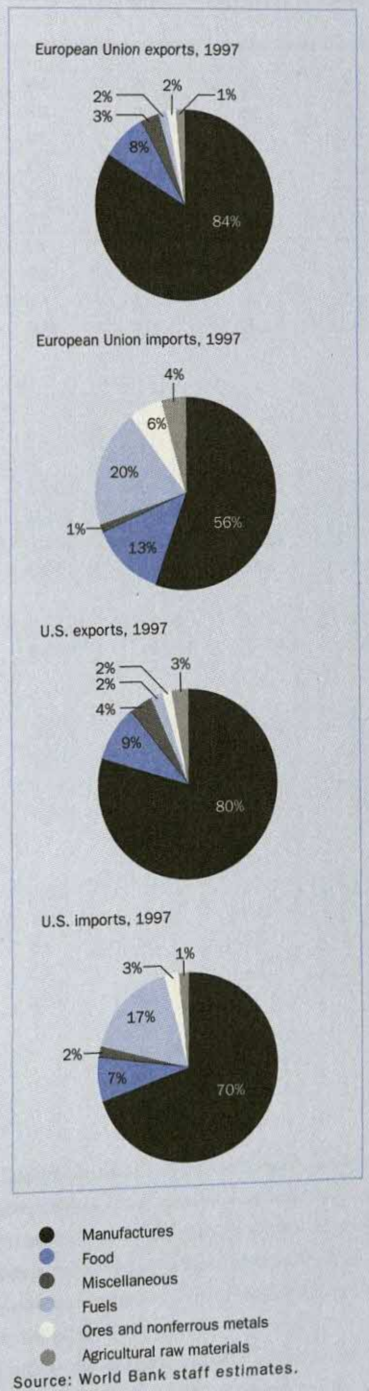
Trade flows between high-income members of the Organisation for Economic Co-operation and Development (OECD) and low- and middle-income economies reflect the changing mix of exports to and imports from developing economies. While food and primary commodities have continued to fall as a share of OECD imports, the share of manufactured goods supplied by developing countries has grown. At the same time, developing countries have increased their imports of manufactured goods from high-income countries—particularly capital-intensive goods such as machinery and transport equipment. Although trade between developing countries has grown substantially over the past decade (see table 6.5), high-income OECD countries remain the developing world's most important partners.

The aggregate flows in the table were compiled from intercountry flows recorded in the United Nations Statistical Division's Commodity Trade (COMTRADE) database. Partner country reports by high-income OECD countries were used for both exports and imports. Exports are recorded free on board (f.o.b.); imports include insurance and freight charges (c.i.f.).

For further discussion of merchandise trade statistics see *About the data* for tables 4.4–4.6 and 6.2.

Figure 6.3

Manufactures dominate U.S. and European trade with developing economies



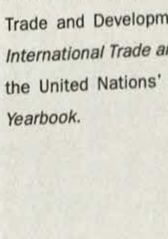
Source: World Bank staff estimates.

The United States and the European Union are the largest trading partners of developing countries.

Definitions

The product groups in the table are defined in accordance with the Standard International Trade Classification (SITC) revision 1: *food* (0, 1, 22, and 4) and *cereals* (04); *agricultural raw materials* (2 excluding 22, 27, and 28); *ores and nonferrous metals* (27, 28, and 68); *fuels* (3), *crude petroleum* (331), and *petroleum products* (332); *manufactured goods* (5–8 excluding 68), *chemical products* (5), *machinery and transport equipment* (7), and *other manufactured goods* (6 and 8 excluding 68); and *miscellaneous goods* (9). • **Exports** are all merchandise exports by high-income OECD countries to low- and middle-income economies as recorded in the United Nations COMTRADE database. • **Imports** are all merchandise imports by high-income OECD countries from low- and middle-income economies as recorded in the United Nations COMTRADE database. • **High-income OECD countries** in 1997 were Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, the Republic of Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States. • **European Union** comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

Data sources


HANDBOOK OF INTERNATIONAL TRADE AND DEVELOPMENT STATISTICS
MANUEL DE STATISTIQUES DU COMMERCE INTERNATIONAL ET DU DEVELOPPEMENT

COMTRADE data are available in machine-readable form from the United Nations Statistical Division. Although not as comprehensive as the underlying COMTRADE records, detailed statistics on international trade are published annually in the United Nations Conference on Trade and Development's (UNCTAD) *Handbook of International Trade and Development Statistics* and the United Nations' *International Trade Statistics Yearbook.*

6.4 Primary commodity prices

	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998
World Bank commodity price index (1990 = 100)											
Nonfuel commodities	174	133	100	93	86	86	101	102	101	109	95
Agriculture	191	145	100	95	88	93	112	110	110	119	104
Beverages	253	239	100	91	72	78	134	127	111	158	135
Food	191	124	100	97	94	93	97	98	108	107	101
Raw materials	145	103	100	97	92	104	114	113	112	105	84
Fertilizers	179	130	100	100	90	79	85	87	105	111	117
Metals and minerals	132	102	100	87	81	70	77	85	78	83	73
Petroleum	224	173	100	83	78	69	63	63	78	77	55
Steel products[a]	110	88	100	96	83	86	84	90	84	81	..
MUV G-5 index	72	69	100	102	107	106	110	119	114	108	104
Commodity prices (1990 $)											
Agricultural raw materials											
Cotton (cents/kg)	284.3	192.1	181.9	164.1	119.9	120.4	160.0	178.5	155.6	161.5	138.9
Logs, Cameroon ($/cu. m)[a]	349.4	253.5	343.5	309.2	310.8	291.9	299.7	284.8	249.4	263.2	275.4
Logs, Malaysian ($/cu. m)	271.5	177.5	177.2	187.4	196.5	366.7	279.1	214.4	221.2	220.2	156.2
Rubber (cents/kg)	197.9	110.6	86.5	80.8	80.8	78.2	102.2	132.6	122.3	94.0	69.4
Sawnwood, Malaysian ($/cu. m)	550.3	447.7	533.1	540.6	569.6	713.3	745.0	620.8	650.4	613.5	465.5
Tobacco ($/mt)	3,160.9	3,807.3	3,392.2	3,424.7	3,226.6	2,535.6	2,399.0	2,214.3	2,676.8	3,261.4	3,227.7
Beverages (cents/kg)											
Cocoa	361.6	328.6	126.7	116.9	103.2	105.1	126.7	120.2	127.7	149.6	161.2
Coffee, robustas	450.4	386.1	118.2	104.9	88.2	108.9	237.8	232.4	158.4	160.5	175.2
Coffee, Arabica	481.4	471.0	197.2	183.3	132.4	146.8	300.2	279.6	236.4	385.2	286.6
Tea, avg., 3 auctions	230.5	255.0	205.8	163.8	150.5	151.9	135.4	124.9	145.7	190.4	196.8
Energy											
Coal, Australian ($/mt)	55.9	49.2	39.7	38.8	36.2	29.5	29.3	33.0	33.4	32.4	28.1
Coal, U.S. ($/mt)	59.9	67.9	41.7	40.6	38.1	35.7	33.1	32.9	32.6	33.6	33.1
Natural gas, Europe ($/mmbtu)	4.7	5.4	2.6	3.0	2.4	2.5	2.2	2.3	2.5	2.5	2.3
Natural gas, U.S. ($/mmbtu)	2.2	3.6	1.7	1.5	1.7	2.0	1.7	1.4	2.4	2.3	2.0
Petroleum ($/bbl)	51.2	39.6	22.9	19.0	17.8	15.8	14.4	14.4	17.9	17.7	12.6

About the data

Primary commodities are raw or partially processed materials that will be transformed into finished goods. They are often the most significant exports of developing countries, and revenues obtained from them have an important effect on living standards. Price data for primary commodities are collected from a variety of sources, including international study groups, trade journals, newspaper and wire service reports, government market surveys, and commodity exchange spot and near-term forward prices. This table uses the most reliable and frequently updated price reports. When possible, the prices received by exporters are used; if export prices are unavailable, the prices paid by importers are used. Annual price series are generally simple averages based on higher-frequency data. The constant price series in the table are deflated using the manufactures unit value (MUV) index for the G-5 countries (see below).

Commodity price indexes are calculated as Laspeyres index numbers in which the fixed weights are the 1987–89 export values for low- and middle-income economies, rebased to 1990. Each index represents a fixed basket of primary commodity exports. The nonfuel commodity price index contains 37 price series for 31 nonfuel commodities. Separate indexes are compiled for petroleum and steel products, which are not included in the nonfuel commodity price index.

The MUV index is a composite index of prices for manufactured exports from the five major (G-5) industrial countries (France, Germany, Japan, the United Kingdom, and the United States) to low- and middle-income economies, valued in U.S. dollars. The index covers products in Standard International Trade Classification (SITC) groups 5–8. To construct the MUV G-5 index, unit value indexes for each country are combined using weights determined by each country's export share.

Primary commodity prices 6.4

	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998
Fertilizers ($/mt)											
Phosphate rock	64.9	49.4	40.5	41.6	39.2	31.0	29.9	29.4	34.2	37.9	41.3
TSP	250.3	176.9	131.8	130.3	113.3	105.3	119.9	125.5	154.3	158.9	166.4
Food											
Fats and oils ($/mt)											
Coconut oil	935.8	860.1	336.5	423.7	541.8	423.6	551.3	562.1	659.3	607.1	632.6
Groundnut oil	1,193.1	1,319.2	963.7	875.5	572.1	695.3	928.1	831.4	787.1	933.9	874.4
Palm oil	810.4	730.3	289.8	331.7	369.1	355.4	479.5	526.8	465.8	504.6	645.2
Soybeans	411.4	326.5	246.8	234.4	220.9	240.0	228.5	217.3	267.4	273.1	230.7
Soybean meal	363.9	228.9	200.2	192.9	191.7	195.8	174.6	165.3	234.7	254.9	163.8
Soybean oil	830.0	833.8	447.3	444.4	402.4	451.9	558.6	524.3	483.8	522.0	601.8
Grains ($/mt)											
Grain sorghum	179.0	150.1	103.9	102.8	96.4	93.2	94.3	99.9	131.6	101.3	94.3
Maize	174.0	163.6	109.3	105.1	97.8	96.0	97.6	103.6	145.5	108.2	98.1
Rice	570.5	287.1	270.9	287.0	251.6	221.5	242.8	269.2	297.3	280.5	292.5
Wheat	239.9	198.0	135.5	125.9	141.8	131.9	135.9	148.5	182.1	147.4	121.3
Other food											
Bananas ($/mt)	526.4	554.4	540.9	547.5	443.8	416.8	398.8	373.4	412.0	464.6	472.6
Beef (cents/kg)	383.3	314.0	256.3	260.6	230.3	246.3	211.5	160.0	156.6	171.6	165.9
Oranges ($/mt)	542.5	580.8	531.1	509.8	458.9	406.9	373.1	445.9	431.3	424.2	425.3
Sugar, EU domestic (cents/kg)	67.6	51.1	58.3	59.9	58.9	58.3	56.4	57.7	59.9	58.0	57.4
Sugar, U.S. domestic (cents/kg)	92.0	65.4	51.3	46.5	44.1	44.8	44.1	42.6	43.2	44.7	46.8
Sugar, world (cents/kg)	87.7	13.1	27.7	19.3	18.7	20.7	24.2	24.6	23.1	23.2	18.9
Metals and minerals											
Aluminum ($/mt)	2,022.2	1,517.5	1,639.0	1,274.2	1,176.6	1,071.5	1,340.1	1,514.8	1,320.9	1,478.3	1,305.1
Copper ($/mt)	3,030.6	2,066.2	2,661.5	2,288.5	2,139.9	1,799.7	2,093.8	2,462.8	2,013.2	2,104.4	1,590.3
Iron ore (cents/DMTU)	39.0	38.7	30.8	32.5	29.6	26.5	23.1	22.6	25.1	26.7	28.5
Lead (cents/kg)	125.8	57.0	81.1	54.6	50.8	38.2	49.7	52.9	67.9	57.7	50.8
Nickel ($/mt)	9,053.8	7,141.5	8,864.1	7,980.0	6,567.8	4,979.7	5,753.0	6,902.7	6,580.2	6,403.0	4,451.0
Tin (cents/kg)	2,329.8	1,682.1	608.5	547.5	572.3	485.5	495.8	521.3	540.8	521.9	532.7
Zinc (cents/kg)	105.7	114.1	151.3	109.3	116.3	90.5	90.5	86.5	89.9	121.6	98.5

a. Series not included in the nonfuel index.

Definitions

- **Nonfuel commodities price index** covers the 31 nonfuel primary commodities that make up the agriculture, fertilizer, and metals and minerals indexes. • **Agriculture**, in addition to food, beverages, and agricultural raw materials, includes sugar, bananas, beef, and oranges. • **Beverages** include cocoa, coffee, and tea. • **Food** includes rice, wheat, maize, sorghum, soybeans, soybean oil, soybean meal, palm oil, coconut oil, and groundnut oil. • **Agricultural raw materials** include timber (logs and sawnwood), cotton, natural rubber, and tobacco. • **Fertilizers** include phosphate rock and triple superphosphate (TSP). • **Metals and minerals** include aluminum, copper, iron ore, lead, nickel, tin, and zinc.

- **Petroleum price index** refers to the average spot price of Brent, Dubai, and West Texas Intermediate crude oil, equally weighted. • **Steel products price index** is the composite price index for eight steel products based on quotations f.o.b. (free on board) Japan excluding shipments to China and the United States, weighted by product shares of apparent combined consumption (volume of deliveries) for Germany, Japan, and the United States. • **MUV G-5 index** is the manufactures unit value index for G-5 country exports to developing countries. • **Commodity prices**—for definitions and sources see the World Bank's quarterly *Global Commodity Markets*.

Data sources

Commodity price data are compiled by the World Bank's Development Prospects Group. More information can be obtained from its quarterly *Global Commodity Markets*. The MUV G-5 index is constructed by the Development Prospects Group. Monthly updates of commodity prices are available on the World Wide Web at http://www.worldbank.org/prospects/.

6.5 Regional trade blocs

Exports within bloc

$ millions	1970	1980	1985	1990	1994	1995	1996	1997
High-income and low- and middle-income economies								
APEC	57,612	357,697	494,464	901,590	1,441,137	1,688,107	1,751,858	1,867,827
European Union	76,451	456,857	419,134	981,260	1,023,313	1,259,699	1,272,360	1,041,069
NAFTA	22,078	102,218	143,191	226,273	352,335	394,472	437,804	496,423
Latin America and the Caribbean								
ALADI	1,263	10,981	7,139	12,331	28,300	34,513	38,532	44,710
Andean Group	97	1,161	768	1,312	3,752	4,751	4,806	5,102
CACM	287	1,174	544	671	1,175	1,365	1,566	1,736
CARICOM	52	577	415	449	232	302	938	1,006
MERCOSUR	451	3,424	1,953	4,127	12,049	14,199	17,075	20,761
OECS	..	4	10	30	40	45	53	59
Africa								
CEMAC	22	75	84	139	56	120	156	152
CEPGL	3	2	9	7	10	8	9	6
COMESA	390	586	399	900	974	1,188	1,583	1,718
ECCAS	29	88	118	158	75	144	183	177
ECOWAS	86	692	1,026	1,533	1,660	2,006	2,393	2,584
MRU	1	7	4	0	1	1	1	1
SADC	251	108	313	1,058	2,955	4,276	4,809	5,006
UEMOA	52	444	395	603	413	539	637	650
Middle East and Asia								
ASEAN	1,201	12,016	13,130	26,367	58,534	72,365	75,949	76,315
Bangkok Agreement	47	612	984	1,511	2,399	3,901	3,969	3,939
ECO	31	392	2,447	1,243	3,973	4,746	4,773	4,790
GCC	117	4,632	3,101	6,906	5,296	5,836	5,031	5,296
SAARC	99	664	641	863	1,434	2,024	2,123	1,933
UMA	60	109	274	958	969	1,067	1,143	1,144

Regional trade blocs 6.5

Exports within bloc

% of total exports	1970	1980	1985	1990	1994	1995	1996	1997
High-income and low- and middle-income economies								
APEC	57.9	57.9	67.7	68.5	72.3	72.0	72.1	71.9
European Union	59.5	60.6	59.0	65.8	61.9	62.4	61.4	55.4
NAFTA	36.0	33.6	43.9	41.4	48.0	46.2	47.6	49.1
Latin America and the Caribbean								
ALADI	9.9	13.7	8.3	10.6	16.5	16.7	16.6	17.2
Andean Group	1.8	3.8	3.2	3.8	10.5	11.8	10.4	10.1
CACM	26.0	24.4	14.4	15.3	16.7	14.1	15.7	13.0
CARICOM	4.2	5.3	6.4	8.1	4.1	4.5	13.2	13.8
MERCOSUR	9.4	11.6	5.5	8.9	19.2	20.3	22.7	25.4
OECS	..	9.2	6.5	8.2	12.1	12.2	11.6	10.7
Africa								
CEMAC	4.8	1.6	1.9	2.3	1.2	2.2	2.2	2.0
CEPGL	0.4	0.1	0.8	0.5	0.7	0.5	0.5	0.4
COMESA	8.6	5.8	4.0	6.2	6.0	6.5	7.7	8.3
ECCAS	2.4	1.4	2.1	2.1	1.2	2.0	2.1	2.0
ECOWAS	2.9	10.1	5.2	7.8	8.7	9.4	8.9	9.7
MRU	0.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0
SADC	4.2	0.4	1.4	3.1	8.5	10.9	11.4	11.4
UEMOA	6.6	9.3	8.7	12.7	9.9	9.9	9.5	11.0
Middle East and Asia								
ASEAN	19.7	16.9	18.4	18.7	22.7	23.1	22.9	22.2
Bangkok Agreement	1.5	2.2	2.4	1.7	1.9	2.4	2.3	2.2
ECO	2.2	6.3	9.9	3.2	7.5	7.9	7.1	6.7
GCC	4.6	3.0	4.9	8.0	6.0	5.7	4.2	4.1
SAARC	3.2	5.2	4.8	3.2	3.8	4.4	4.3	3.9
UMA	1.4	0.3	1.0	2.9	3.8	3.6	3.4	3.1

6.5 Regional trade blocs

Total exports by bloc

% of world exports	1970	1980	1985	1990	1994	1995	1996	1997
middle-income economies								
APEC	35.3	33.7	38.9	38.9	46.9	46.2	46.0	47.4
European Union	45.6	41.1	37.9	44.1	38.9	39.8	39.2	34.3
NAFTA	21.7	16.6	17.4	16.1	17.3	16.8	17.4	18.4
Latin America and the Caribbean								
ALADI	4.5	4.4	4.6	3.4	4.0	4.1	4.4	4.7
Andean Group	1.9	1.7	1.3	1.0	0.8	0.8	0.9	0.9
CACM	0.4	0.3	0.2	0.1	0.2	0.2	0.2	0.2
CARICOM	0.4	0.6	0.3	0.2	0.1	0.1	0.1	0.1
MERCOSUR	1.6	1.9	1.4	1.3	1.4	1.4	1.5	..
OECS	..	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Africa								
CEMAC	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1
CEPGL	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0
COMESA	1.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4
ECCAS	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.2
ECOWAS	1.1	0.4	1.0	0.6	0.4	0.4	0.5	0.5
MRU	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
SADC	2.1	1.6	1.2	1.0	0.8	0.8	0.8	0.8
UEMOA	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1
Middle East and Asia								
ASEAN	2.2	3.9	3.8	4.2	6.1	6.2	6.3	6.3
Bangkok Agreement	1.1	1.5	2.2	2.6	3.0	3.2	3.2	3.2
ECO	0.5	0.3	1.3	1.1	1.2	1.2	1.3	1.3
GCC	0.9	8.5	3.4	2.5	2.1	2.0	2.3	2.3
SAARC	1.1	0.7	0.7	0.8	0.9	0.9	0.9	0.9
UMA	1.5	2.3	1.5	1.0	0.6	0.6	0.6	0.7

Regional trade blocs 6.5

About the data

Trade blocs are groups of countries that have established special preferential arrangements governing trade between members. Although in some cases the preferences—such as lower tariff duties or exemptions from quantitative restrictions—may be no greater than those available to other trading partners, the general purpose of such arrangements is to encourage exports by bloc members to one another—sometimes called intratrade. The table shows the value of merchandise intratrade for important regional trade blocs. (Service exports are not included.) Also shown is the size of intratrade relative to the bloc's total exports of goods and the share of the bloc's total exports in world exports.

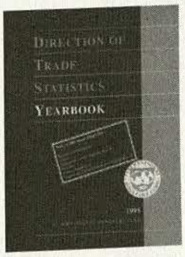
Data on country exports are drawn from the International Monetary Fund's (IMF) Direction of Trade database and should be broadly consistent with other sources, such as the United Nations Commodity Trade (COMTRADE) database. However, trade flows between many developing countries, particularly in Africa, are not well recorded. Thus the value of intratrade within certain groups may be understated. Data on trade between developing and high-income countries are generally complete.

Membership in the trading blocs shown is based on the most recent information available. Although bloc exports have been calculated back to 1970 on the basis of current membership, most of the blocs came into existence at later dates and their membership may have changed over time. For this reason, and because systems of preferences also change over time, intratrade in earlier years may not have been affected by the same preferences as in current years. Differences from previously published estimates may be due to changes in bloc membership or to revisions in the underlying data.

Definitions

- **Exports within bloc** are the sum of exports by members of a trading bloc to other members of the bloc. They are shown both in U.S. dollars and as a percentage of total exports by the bloc. • **Total exports by bloc as a share of world exports** are the ratio of the bloc's total exports (exports within the bloc and to the rest of the world) to total exports by all economies in the world.
- **Regional bloc memberships: Asia Pacific Economic Cooperation (APEC)**, Australia, Brunei Darussalam, Canada, Chile, China, Hong Kong (China), Indonesia, Japan, the Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, the Philippines, the Russian Federation, Singapore, Taiwan (China), Thailand, the United States, and Vietnam; **European Union**, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom; **North American Free Trade Association (NAFTA)**, Canada, Mexico, and the United States; **Latin American Integration Association (ALADI)**, Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela; **Andean Group**, Bolivia, Colombia, Ecuador, Peru, and Venezuela; **Central American Common Market (CACM)**, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua; **Caribbean Community (CARICOM)**, Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago; **Southern Common Market (MERCOSUR)**, Argentina, Brazil, Paraguay, and Uruguay; **Organization of Eastern Caribbean States (OECS)**, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines; **Economic and Monetary Community of Central Africa (CEMAC)**, Cameroon, the Central African Republic, Chad, the Republic of Congo, Equatorial Guinea, Gabon, and São Tomé and Principe; **Economic Community of the Great Lakes Countries (CEPGL)**, Burundi, the Democratic Republic of the Congo, and Rwanda; **Common Market for Eastern and Southern Africa (COMESA)**, Angola, Burundi, Comoros, the Democratic Republic of the Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Namibia, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Tanzania, Zambia, and Zimbabwe; **Economic Community of Central African States (ECCAS)**, Burundi, Cameroon, the Central African Republic, Chad, the Democratic Republic of the Congo, the Republic of Congo, Equatorial Guinea, Gabon, Rwanda, and São Tomé and Principe; **Economic Community of West African States (ECOWAS)**, Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo; **Mano River Union (MRU)**, Guinea, Liberia, and Sierra Leone; **Southern African Development Community (SADC)**, Angola, Botswana, the Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Swaziland, South Africa, Tanzania, Zambia, and Zimbabwe; **West African Economic and Monetary Union (UEMOA)**, Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal, and Togo; **Association of South-East Asian Nations (ASEAN)**, Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Thailand; **Bangkok Agreement (First Agreement on Trade Negotiation among Developing Member Countries of the Economic and Social Commission for Asia and the Pacific)**, Bangladesh, India, the Republic of Korea, the Lao People's Democratic Republic, and Sri Lanka; **Economic Cooperation Organization (ECO)**, Afghanistan, Azerbaijan, the Islamic Republic of Iran, Kazakhstan, the Kyrgyz Republic, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan; **Gulf Cooperation Council (GCC)**, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates; **South Asian Association for Regional Cooperation (SAARC)**, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka; and **Arab Maghreb Union (UMA)**, Algeria, Libya, Mauritania, Morocco, and Tunisia.

Data sources



Data on merchandise trade flows are published in the IMF's *Direction of Trade Statistics Yearbook* and *Direction of Trade Statistics Quarterly;* the data in the table were calculated using the IMF's Direction of Trade database. The United Nations Conference on Trade and Development (UNCTAD) publishes data on intratrade in its *Handbook of International Trade and Development Statistics.*

6.6 Tariff barriers

	Year	All products			Primary products			Manufactured products		
		Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %
Algeria	1998	24.2	16.7	17.2	21.8	18.1	14.7	24.9	16.2	17.7
Argentina	1992	11.8	7.4	11.2	8.2	4.8	5.0	12.7	7.7	13.2
	1993	10.9	5.0	11.3	6.0	2.9	3.7	12.1	4.7	13.7
	1995	10.5	7.6	10.5	8.5	5.3	5.6	10.9	7.9	12.1
	1997	11.3	6.8	11.3	8.4	5.3	5.6	11.9	6.9	12.7
	1998	13.5	6.9	12.9	11.1	5.7	7.4	14.0	7.0	14.1
Australia	1991	12.9	15.1	10.4	2.6	5.3	1.4	15.5	15.7	13.1
	1993	9.8	11.9	7.7	2.5	4.8	1.3	11.7	12.4	9.7
	1997	5.7	8.2	3.9	1.2	2.2	0.7	6.8	8.7	4.6
	1998	5.3	7.4	3.7	1.2	2.2	0.7	6.4	7.8	4.4
Austria	1990	8.7	7.5	7.9	7.9	9.9	4.8	9.0	6.5	8.8
Bangladesh	1989	114.0	84.9	114.2	85.1	58.7	76.1	123.2	89.8	125.5
Belarus	1996	12.3	10.4	13.5	10.3	7.9	7.8	13.2	11.2	15.4
	1997	12.6	8.4	13.7	11.0	6.7	8.4	13.3	8.9	15.0
Bolivia	1993	9.8	1.0	9.8	10.0	0.2	10.0	9.7	1.1	9.7
	1998	9.7	1.2	9.7	10.0	0.2	10.0	9.6	1.4	9.7
Brazil	1990	31.8	19.8	33.0	25.7	21.9	13.1	33.2	19.0	39.4
	1991	25.1	17.3	26.7	19.8	19.8	9.4	26.3	16.3	32.2
	1992	20.7	14.2	23.1	15.9	16.6	9.3	21.8	13.3	27.4
	1994	11.9	8.2	14.6	8.2	7.1	7.2	12.8	8.2	17.0
	1997	11.9	7.7	14.6	8.6	5.7	7.1	12.6	7.8	16.4
	1998	14.6	7.3	16.6	11.3	5.9	9.1	15.2	7.4	18.3
Canada	1989	8.8	7.2	7.0	5.0	5.9	2.9	9.9	7.1	8.2
	1993	8.7	7.0	6.8	4.7	5.8	2.7	9.7	6.9	8.0
	1995	10.1	24.2	7.2	14.2	49.3	5.5	8.9	6.6	7.7
	1996	9.1	27.2	5.6	16.5	55.7	7.8	7.0	6.6	5.2
	1997	5.9	8.0	4.4	4.0	12.2	3.0	6.4	6.3	4.7
	1998	7.5	26.5	3.8	16.1	54.9	6.7	5.1	6.1	3.2
Central African Republic	1995	18.6	9.6	17.1	20.6	9.7	16.2	17.9	9.5	17.4
Chile	1992	11.0	0.7	10.9	11.0	0.0	11.0	10.9	0.8	10.8
	1998	11.0	0.7	10.9	11.0	0.0	11.0	10.9	0.8	10.9
China	1992	42.9	32.1	40.6	36.2	26.2	22.3	44.9	33.4	46.5
	1993	39.9	29.9	38.4	33.3	24.7	20.9	41.8	31.0	44.0
	1994	36.3	27.9	35.5	32.1	24.3	19.6	37.6	28.8	40.6
	1996	23.6	17.4	22.6	25.4	22.1	20.0	23.1	15.8	23.2
	1997	17.6	13.0	18.2	17.9	18.1	20.0	17.5	11.0	17.8
	1998	17.5	13.0	18.7	17.9	18.6	20.0	17.4	10.8	18.5
Colombia	1991	6.7	8.3	8.2	8.9	10.0	5.8	6.1	7.7	8.9
	1994	11.8	6.3	12.0	12.1	6.0	10.6	11.7	6.4	12.4
	1995	13.3	4.9	12.7	12.7	5.9	10.7	13.5	4.6	13.4
	1998	11.7	6.2	10.6	12.4	6.1	11.0	11.4	6.3	10.5
Cuba	1997	10.7	6.9	9.7	7.6	7.3	4.9	11.6	6.5	11.5
Dominican Republic	1997	14.5	9.2	13.6	15.3	10.2	10.8	14.2	8.9	14.5
Ecuador	1993	9.3	6.0	8.5	9.4	5.8	7.6	9.2	6.1	8.8
	1995	12.3	5.6	11.9	12.2	6.2	10.4	12.4	5.4	12.4
	1998	11.3	6.4	10.4	11.8	6.5	10.2	11.2	6.3	10.4
El Salvador	1995	10.2	7.6	8.5	11.5	6.4	8.8	9.8	8.0	8.4
	1998	5.7	7.9	4.3	10.0	8.4	6.5	4.4	7.3	3.8
Estonia	1995	0.1	1.2	0.4	0.1	1.1	0.0	0.1	1.2	0.5
European Union	1988	8.7	7.3	6.9	10.1	10.5	4.7	8.3	5.9	7.5
	1990	8.7	7.3	7.2	10.1	10.4	5.0	8.3	5.9	7.8
	1994	7.7	6.3	6.6	10.3	10.6	4.9	6.9	3.8	7.0
	1996	6.7	5.8	4.9	10.3	8.8	3.8	5.5	3.7	5.1
	1998	6.0	5.6	3.5	9.4	8.1	3.4	4.8	3.9	3.5
Finland	1988	8.0	10.2	5.8	6.6	11.2	2.7	8.4	9.9	6.8
	1990	8.1	10.3	5.8	6.8	11.4	2.6	8.5	10.0	6.8
Guatemala	1998	8.4	9.5	5.7	8.6	7.3	8.3	8.3	10.1	5.1

Tariff barriers 6.6

		All products			Primary products			Manufactured products		
	Year	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %
Hungary	1991	12.6	11.0	12.3	14.7	16.2	10.2	12.1	8.9	13.0
	1996	15.2	18.2	10.7	30.6	27.4	14.4	9.2	6.1	9.8
	1997	14.3	17.0	10.2	28.8	25.6	13.7	8.7	5.9	9.4
India	1990	81.8	39.4	83.0	74.1	38.4	49.5	84.1	39.4	93.6
	1997	30.0	14.0	27.7	25.7	22.6	22.6	31.3	9.8	29.5
Indonesia	1989	25.2	21.8	23.6	18.9	14.8	11.7	27.1	23.3	27.4
	1990	20.6	16.7	20.9	17.7	12.8	10.7	21.5	17.7	24.2
	1993	19.4	16.1	21.7	16.7	12.3	10.0	20.3	17.0	25.4
	1996	13.0	16.7	13.8	12.3	19.6	9.3	13.2	15.7	14.9
Japan	1988	7.1	7.7	3.7	11.2	10.1	5.9	6.1	6.7	3.3
	1998	5.7	7.7	2.0	8.9	10.5	4.5	4.5	5.9	1.5
Kazakhstan	1996	9.4	10.9	7.1	9.9	8.7	7.1	9.2	11.7	7.1
Korea, Rep.	1988	18.9	8.7	17.1	20.3	16.1	14.9	18.6	5.1	17.8
	1989	14.9	6.6	13.7	15.6	12.8	10.9	14.7	3.3	14.7
	1990	13.3	6.7	12.3	15.7	13.0	11.0	12.7	2.9	12.6
	1992	11.6	6.5	10.7	14.6	12.6	10.3	10.8	2.2	10.8
	1996	11.1	26.1	9.5	21.0	47.2	17.0	8.2	13.5	7.8
Latvia	1996	4.5	7.9	2.5	8.5	11.0	3.0	2.9	5.3	2.3
	1997	5.9	10.7	2.5	11.5	16.2	4.3	3.5	5.7	2.0
Lithuania	1995	4.5	9.0	2.5	8.7	13.0	3.6	2.8	5.9	2.1
	1997	4.6	9.3	1.9	9.1	13.3	4.1	2.7	5.8	1.4
Malawi	1994	30.8	15.5	27.1	24.6	15.6	14.8	32.8	15.0	32.2
	1997	25.3	11.6	23.5	21.2	12.6	13.6	26.5	11.0	26.7
Malaysia	1988	17.0	14.2	12.6	15.8	10.7	6.3	17.6	15.6	14.4
	1991	16.9	14.7	12.5	15.3	10.6	6.0	17.8	16.3	14.4
	1993	14.3	14.1	11.1	10.9	12.7	6.0	15.3	14.3	12.6
	1996	8.7	14.4	8.1	2.4	6.5	2.7	11.8	16.1	9.3
	1997	9.1	19.6	9.4	4.1	22.2	9.8	12.0	17.2	9.4
Malta	1997	7.6	5.8	8.2	6.7	8.5	5.9	8.1	3.7	8.8
Mauritius	1997	29.1	26.2	31.9	19.7	19.1	19.1	31.7	27.3	36.0
Mexico	1991	13.0	4.4	13.1	12.1	5.7	10.8	13.2	4.2	13.8
	1995	12.6	5.4	11.8	12.3	6.0	10.8	12.6	5.3	12.2
	1998	13.3	13.5	12.5	16.8	29.0	14.6	12.6	7.8	12.0
Moldova	1996	6.7	9.4	4.0	11.2	11.9	4.3	4.9	7.5	3.8
Mozambique	1997	15.6	14.3	14.1	16.9	15.1	12.0	15.3	14.0	14.8
Nepal	1998	16.3	15.5	18.6	9.2	13.6	8.2	18.3	15.4	21.0
New Zealand	1992	8.7	10.6	8.1	4.4	6.3	2.3	9.9	11.3	9.9
	1993	8.5	10.3	7.7	4.3	6.0	2.1	9.7	11.0	9.4
	1996	6.1	7.8	4.7	3.1	4.3	1.6	7.0	8.4	5.4
	1997	5.3	7.0	4.1	2.6	3.8	1.4	6.1	7.5	4.7
	1998	4.5	6.0	3.5	2.0	3.3	1.1	5.2	6.4	4.0
Nicaragua	1998	5.9	7.3	4.0	8.3	10.1	5.9	5.2	5.9	3.6
Nigeria	1988	33.7	26.1	29.9	31.0	22.5	24.2	34.5	27.0	31.5
	1990	35.7	30.8	34.3	33.2	30.1	26.1	36.5	31.0	36.8
Norway	1988	6.0	7.1	5.0	1.6	4.9	0.8	7.1	7.1	6.4
	1996	6.0	15.2	4.3	4.9	30.5	1.5	6.2	8.3	4.9
	1998	4.1	16.5	2.2	5.1	29.9	1.4	3.9	11.5	2.4
Panama	1998	9.2	5.9	8.0	11.4	6.9	9.3	8.5	5.4	7.7
Papua New Guinea	1997	20.5	19.2	18.4	30.5	22.9	23.9	17.6	16.9	17.2
Paraguay	1991	15.9	12.9	14.4	15.6	13.8	10.2	15.9	12.6	15.8
	1994	8.0	7.7	8.1	7.9	7.4	5.3	8.1	7.8	8.9
	1995	9.3	6.9	9.0	8.2	5.2	5.2	9.5	7.2	10.3
	1996	9.3	7.1	8.3	8.9	6.3	6.2	9.4	7.3	8.8
	1998	9.5	6.5	8.7	8.6	5.6	5.9	9.7	6.6	9.3
Peru	1993	17.6	4.4	17.1	17.3	4.2	16.3	17.7	4.4	17.3
	1998	13.2	2.9	12.6	13.7	3.3	13.0	13.1	2.7	12.5
Philippines	1988	28.2	15.1	27.2	28.9	16.2	22.0	28.0	14.7	28.8

6.6 Tariff barriers

		All products			Primary products			Manufactured products		
	Year	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %	Mean tariff %	Standard deviation of tariff rates %	Weighted mean tariff %
	1992	19.6	9.2	18.3	20.1	9.8	15.5	19.4	9.0	19.2
	1993	22.5	14.1	20.2	23.9	15.3	17.9	22.1	13.7	21.0
	1994	21.6	13.3	19.5	22.3	14.0	16.8	21.5	13.1	20.4
	1995	20.0	11.0	18.4	21.6	12.8	16.8	19.5	10.4	18.9
	1998	11.2	11.4	9.3	14.4	17.8	10.2	10.3	8.3	9.1
Poland	1991	11.7	8.9	10.4	10.4	10.3	7.4	12.1	8.5	11.4
	1995	11.6	7.6	9.0	11.5	9.6	5.3	11.7	6.9	10.1
	1996	18.7	28.1	14.9	29.2	47.4	18.0	14.1	8.7	14.2
Russian Federation	1993	7.3	9.8	9.7	3.8	12.2	5.7	8.7	8.2	10.9
	1994	11.5	12.4	14.0	8.0	8.4	5.1	12.9	13.4	16.8
	1996	10.9	8.3	11.3	10.3	7.5	7.8	11.1	8.5	12.1
	1997	12.6	8.4	13.8	10.9	6.6	8.4	13.4	8.9	15.1
Singapore	1989	0.5	2.7	2.3	0.2	2.4	1.0	0.6	2.8	2.7
South Africa[a]	1988	12.7	11.8	11.3	7.2	9.8	5.0	13.6	11.9	13.1
	1990	11.0	11.3	10.9	6.9	9.6	4.7	11.7	11.4	12.7
	1991	10.5	11.8	11.3	6.8	10.6	4.8	11.2	11.9	13.3
	1993	19.7	21.9	14.3	9.4	11.7	5.2	21.2	22.6	16.9
	1997	8.7	10.9	6.6	8.0	11.3	4.4	8.9	10.8	7.1
Sri Lanka	1990	28.3	25.5	24.1	31.4	28.7	30.2	27.5	24.5	22.2
	1993	24.2	18.1	23.0	26.8	21.9	25.3	23.5	16.8	22.3
	1997	20.0	15.4	20.7	23.8	23.0	23.6	19.1	12.6	19.8
Sweden	1988	4.8	4.8	3.8	1.7	4.2	0.4	5.6	4.7	4.8
Tanzania	1997	21.8	13.9	23.6	30.6	10.9	22.7	19.9	13.7	23.7
	1998	22.1	13.9	23.7	30.0	11.8	22.7	20.3	13.7	24.0
Thailand	1989	39.8	23.0	38.7	32.7	19.1	25.5	41.7	23.6	42.4
	1991	39.9	23.0	38.8	32.8	19.1	25.5	41.8	23.6	42.4
	1993	45.6	25.0	41.5	40.3	19.4	33.9	47.2	26.2	43.7
Trinidad and Tobago	1991	18.6	15.3	16.5	22.2	18.2	13.2	17.4	14.1	17.6
	1992	18.7	15.3	16.7	22.9	18.0	14.1	17.4	14.1	17.5
Tunisia	1990	29.2	10.7	26.2	28.4	12.3	20.9	29.4	10.2	27.9
	1992	29.3	10.9	26.2	28.4	12.3	20.9	29.6	10.5	27.9
	1998	29.9	12.8	23.4	31.0	11.7	23.2	29.6	13.0	23.5
Turkey	1997	13.5	25.4	7.4	34.1	42.2	14.8	6.0	4.6	5.7
Ukraine	1997	10.0	10.9	6.9	15.7	12.2	6.4	7.5	9.2	7.1
United States	1989	6.3	6.1	4.4	4.5	6.4	2.4	6.7	5.9	4.8
	1995	5.9	7.0	4.1	5.5	10.9	2.7	6.0	5.8	4.4
	1997	6.6	14.9	3.2	9.2	28.3	2.9	5.7	6.2	3.3
	1998	5.2	11.8	2.8	6.4	25.1	3.2	4.9	5.5	2.7
Uruguay	1992	6.5	5.9	5.5	7.2	6.2	4.3	6.2	5.8	5.9
	1995	9.3	7.1	8.9	8.4	5.4	5.3	9.5	7.4	10.1
	1996	9.5	7.3	8.0	8.6	5.6	5.6	9.7	7.6	8.6
	1997	10.0	6.9	8.3	8.8	5.3	5.5	10.3	7.3	9.0
	1998	12.2	7.9	10.0	11.4	5.5	7.2	12.4	8.4	10.7
Venezuela	1992	15.7	11.3	16.1	15.8	10.3	12.7	15.7	11.5	16.9
	1995	13.4	4.8	12.8	12.8	5.8	10.9	13.5	4.5	13.4
	1997	11.9	6.1	10.9	12.4	6.1	10.9	11.8	6.1	10.9
	1998	12.0	6.1	10.9	12.5	6.1	10.9	11.9	6.1	10.9
Zambia	1997	13.6	9.3	14.3	15.9	8.7	12.6	13.0	9.4	14.7
Zimbabwe	1997	24.0	23.1	21.7	21.9	20.1	17.1	24.7	23.9	22.8
	1998	22.2	17.8	20.0	22.0	20.1	17.7	22.3	17.1	20.5

[a] Data are for the South African Customs Union, which comprises Botswana, Lesotho, Namibia, and South Africa.

Tariff barriers 6.6

About the data

Economies regulate their imports through a combination of tariff and nontariff measures. The most common form of tariff is an ad valorem duty, but tariffs may also be levied on a specific, or per unit, basis. Tariffs may be used to raise fiscal revenues or to protect domestic industries from foreign competition—or both. Nontariff barriers, which limit the quantity of imports of a particular good, take many forms. Some common ones are licensing schemes, quotas, prohibitions, export restraint arrangements, and health and quarantine measures. Nontarriff barriers are generally considered more detrimental to economic efficiency than tariffs because efficient foreign producers cannot undercut the barriers by reducing their costs and thus their prices. A high percentage of products subject to nontariff barriers indicates a protectionist trade regime, but the frequency of nontariff barriers does not measure their restrictiveness. Moreover, a wide range of domestic policies and regulations (such as health regulations) that are not measured by this indicator may act as nontariff barriers. Because of the difficulty of combining nontariff barriers into an aggregate indicator, they are not included in this table.

The table shows both simple average tariffs and average tariffs weighted by world imports. Simple averages are a better indicator of tariff protection than averages weighted by the country's own import values, which are biased downward, especially when tariffs are set so high as to discourage trade. Weights based on world imports provide an alternative measure of a country's tariff barriers that reflects average world trading patterns.

Mean tariffs are calculated as the average ad valorem duty across all tariff lines. Specific duties—duties not expressed as a proportion of the declared value—are not included. Countries typically maintain a hierarchy of trade preferences applicable to specific trading partners. The rates used in calculating the indicators here are the applied most-favored-nation duties. Applied rates are less than or equal to the bound rates that countries have agreed to in World Trade Organization negotiations, but they may exceed the rates applied to partners in preferential trade agreements such as the North American Free Trade Agreement. (See table 6.5 for the membership of regional trade blocs and data on their exports.)

Some countries set fairly uniform tariff rates across all imports. Others are more selective, setting high tariffs to protect favored domestic industries and low tariffs on goods that have few domestic suppliers or that are necessary inputs for domestic industry. The standard deviation of tariffs is a measure of the dispersion of tariff rates around their mean value. Highly dispersed rates are evidence of discriminatory tariffs that may distort production and consumption decisions. But this tells only part of the story. The effective rate of protection—the degree to which the value added in an industry is protected—may exceed the nominal rate if the tariff system systematically differentiates among imports of raw materials, intermediate products, and finished goods.

The indicators shown in this table were calculated from data supplied by the United Nations Conference on Trade and Development (UNCTAD). Data are classified using the Harmonized System of trade codes at the six- or eight-digit level. Tariff line data were matched to Standard International Trade Classification (SITC) revision 2 codes to define the commodity groups and global import weights. Import weights were calculated for 1995 using the United Nations COMTRADE database. Data are shown only for the countries and years for which complete data are available and, to conserve space, observations were dropped when there was no change in the average tariff rate in successive years.

Definitions

• **Primary products** are commodities classified in SITC sections 0, 1, 2, 3, and 4 plus division 68 (nonferrous metals). • **Manufactured products** are commodities classified in SITC sections 5, 6, 7, 8, and 9, excluding division 68. • **Mean tariff** is the unweighted average of the applied rates for all products subject to tariffs. • **Standard deviation of tariff rates** measures the average dispersion of tariff rates around the simple mean. • **Weighted mean tariff** is the average of applied rates weighted by product shares in 1995 world imports.

Data sources

Mean tariff rates and their standard deviations were calculated by World Bank staff using data from the United Nations Conference on Trade and Development (UNCTAD) Trade Analysis Information System. Data on global imports come from the United Nations COMTRADE database.

6.7 Global financial flows

	Net private capital flows		Foreign direct investment		Portfolio investment flows				Bank and trade-related lending	
					Bonds		Equity			
	$ millions		$ millions		$ millions		$ millions		$ millions	
	1990	1997	1990	1997	1990	1997	1990	1997	1990	1997
Albania	31	47	0	48	0	0	0	0	31	–1
Algeria	–424	–543	0	7	–16	0	0	8	–409	–557
Angola	237	–24	–335	350	0	0	0	0	572	–374
Argentina	–203	19,834	1,836	6,645	–857	9,015	13	2,236	–1,196	1,939
Armenia	..	51	..	51	..	0	..	0	..	0
Australia	..	..	7,465	9,146	..	..	..	..	..	..
Austria	..	..	653	2,466	..	..	..	..	..	..
Azerbaijan	..	658	..	650	..	0	..	0	..	8
Bangladesh	70	118	3	135	0	0	0	11	67	–28
Belarus	..	169	..	200	..	0	..	0	..	–31
Belgium	..	..	..	..	..	..	..	..	..	..
Benin	1	3	1	3	0	0	0	0	0	0
Bolivia	3	812	27	601	0	–3	0	0	–24	213
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Botswana	77	95	95	100	0	0	0	0	–19	–5
Brazil	562	43,377	989	19,652	129	1,221	0	3,835	–556	18,669
Bulgaria	–42	569	4	498	65	–62	0	130	–111	3
Burkina Faso	0	0	0	0	0	0	0	0	0	0
Burundi	–5	1	1	1	0	0	0	0	–6	0
Cambodia	0	200	0	203	0	0	0	0	0	–3
Cameroon	–125	16	–113	45	0	0	0	0	–12	–29
Canada	..	..	7,581	7,132	..	..	..	..	..	..
Central African Republic	0	6	1	6	0	0	0	0	–1	0
Chad	–1	15	0	15	0	0	0	0	–1	0
Chile	2,098	9,637	590	5,417	–7	1,039	320	486	1,194	2,695
China	8,107	60,828	3,487	44,236	–48	3,330	0	8,457	4,668	4,805
Hong Kong, China	..	..	..	..	..	..	..	..	..	..
Colombia	345	10,151	500	5,982	–4	1,068	0	116	–151	2,984
Congo, Dem. Rep.	–24	1	–12	1	0	0	0	0	–12	0
Congo, Rep.	–100	9	0	9	0	0	0	0	–100	0
Costa Rica	23	104	163	57	–42	40	0	0	–99	7
Côte d'Ivoire	57	–91	48	327	–1	0	0	18	10	–436
Croatia	..	2,397	..	388	..	485	..	0	..	1,524
Cuba	..	..	1	..	..	..	..	..	..	..
Czech Republic	876	1,818	207	1,286	0	205	0	16	669	311
Denmark	..	..	1,132	2,792	..	..	..	..	..	..
Dominican Republic	130	401	133	405	0	–2	0	0	–3	–2
Ecuador	183	829	126	577	0	–136	0	0	57	387
Egypt, Arab Rep.	698	2,595	734	891	–1	0	0	1,813	–35	–109
El Salvador	8	61	2	11	0	0	0	0	6	50
Eritrea	..	0	..	0	..	0	..	0	..	0
Estonia	..	347	..	266	..	81	..	1	..	–2
Ethiopia[a]	–45	28	12	5	0	0	0	0	–57	23
Finland	..	..	812	2,128	..	..	..	..	..	..
France	..	..	13,183	23,045	..	..	..	..	..	..
Gabon	103	–105	74	–100	0	0	0	0	29	–5
Gambia, The	–8	12	0	12	0	0	0	0	–8	0
Georgia	..	50	..	50	..	0	..	0	..	0
Germany	..	..	2,532	–344	..	..	..	..	..	..
Ghana	–5	203	15	130	0	0	0	46	–20	27
Greece	..	..	1,005	984	..	..	0	..	..	..
Guatemala	44	166	48	90	–11	106	0	0	7	–30
Guinea	–1	–23	18	1	0	0	0	0	–19	–24
Guinea-Bissau	2	2	2	2	0	0	0	0	0	0
Haiti	8	3	8	3	0	0	0	0	0	0
Honduras	77	124	44	122	0	–30	0	0	33	33

Global financial flows 6.7

	Net private capital flows		Foreign direct investment		Portfolio investment flows				Bank and trade-related lending	
					Bonds		Equity			
	$ millions		$ millions		$ millions		$ millions		$ millions	
	1990	1997	1990	1997	1990	1997	1990	1997	1990	1997
Hungary	–308	2,605	0	2,079	921	–1,212	150	1,810	–1,379	–72
India	1,872	8,306	162	3,351	147	1,919	105	2,116	1,458	920
Indonesia	3,235	10,863	1,093	4,677	26	3,120	312	298	1,804	2,769
Iran, Islamic Rep.	–392	–303	–362	50	0	0	0	0	–30	–353
Iraq	..	..	0	0	..	..	0	0	..	..
Ireland	..	..	627	2,727	..	..	..	..	..	..
Israel	..	..	101	2,706	..	..	..	..	..	..
Italy	..	..	6,411	3,700	..	..	..	..	..	..
Jamaica	92	377	138	137	0	200	0	0	–46	40
Japan	..	..	1,777	3,200	..	..	..	..	..	..
Jordan	254	61	38	22	0	90	0	70	216	–122
Kazakhstan	..	2,158	..	1,321	..	350	..	50	..	436
Kenya	124	–87	57	20	0	0	0	12	67	–119
Korea, Dem. Rep.	..	..	0	..	..	..	0	..	..	..
Korea, Rep.	1,056	13,069	788	2,844	168	2,704	518	1,257	–418	6,264
Kuwait	..	..	..	16	..	..	..	..	..	..
Kyrgyz Republic	..	50	..	50	..	0	..	0	..	0
Lao PDR	6	90	6	90	0	0	0	0	0	0
Latvia	..	559	..	521	..	–3	..	26	..	15
Lebanon	12	1,070	6	150	0	719	0	89	6	112
Lesotho	17	42	17	29	0	0	0	0	0	13
Libya	..	..	159	..	..	..	0	..	..	..
Lithuania	..	637	..	355	..	90	..	0	..	193
Macedonia, FYR	..	8	..	15	..	0	..	0	..	–7
Madagascar	7	13	22	14	0	0	0	0	–15	–1
Malawi	2	1	0	2	0	0	0	0	2	–1
Malaysia	769	9,312	2,333	5,106	–1,239	2,503	293	–489	–617	2,192
Mali	–8	15	–7	15	0	0	0	0	–1	0
Mauritania	6	2	7	3	0	0	0	0	–1	–2
Mauritius	86	771	41	53	0	600	0	24	45	94
Mexico	8,253	20,533	2,634	12,477	661	473	563	2,052	4,396	5,530
Moldova	0	257	0	60	0	75	0	0	0	121
Mongolia	..	16	..	7	..	0	..	0	..	9
Morocco	341	1,303	165	1,200	0	0	0	243	176	–140
Mozambique	35	37	9	35	0	0	0	0	26	2
Myanmar	153	180	161	80	0	0	0	–2	–8	102
Namibia	..	..	29	187	..	..	..	..	..	..
Nepal	–8	12	6	23	0	0	0	0	–14	–11
Netherlands	..	..	12,352	8,725	..	..	..	..	..	..
New Zealand	..	..	1,735	933	..	..	..	..	..	..
Nicaragua	21	157	0	173	0	0	0	0	21	–16
Niger	9	–12	–1	2	0	0	0	0	10	–14
Nigeria	467	1,285	588	1,539	0	0	0	4	–121	–258
Norway	..	..	1,003	3,545	..	..	..	..	..	..
Oman	–259	118	141	90	0	225	0	38	–400	–234
Pakistan	182	2,097	244	713	0	375	0	252	–63	757
Panama	127	1,443	132	1,030	–2	459	0	2	–4	–48
Papua New Guinea	204	143	155	200	0	0	0	0	49	–57
Paraguay	67	273	76	250	0	0	0	0	–9	23
Peru	59	3,094	41	2,030	0	–802	0	692	18	1,175
Philippines	639	4,164	530	1,222	395	2,631	0	73	–286	238
Poland	71	6,787	89	4,908	0	803	0	944	–18	131
Portugal	..	..	2,610	1,713	..	..	..	..	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..
Romania	4	2,274	0	1,215	0	422	0	0	4	637
Russian Federation	5,562	12,453	0	6,241	310	5,460	0	1,206	5,252	–454

6.7 Global financial flows

	Net private capital flows		Foreign direct investment		Portfolio investment flows				Bank and trade-related lending	
					Bonds		Equity			
	$ millions		$ millions		$ millions		$ millions		$ millions	
	1990	1997	1990	1997	1990	1997	1990	1997	1990	1997
Rwanda	6	1	8	1	0	0	0	0	–2	0
Saudi Arabia	..	..	1,864	..	..	..	..	..	..	..
Senegal	42	44	57	30	0	0	0	0	–15	14
Sierra Leone	36	4	32	4	0	0	0	0	4	0
Singapore	..	..	5,575	8,631	..	..	..	..	..	..
Slovak Republic	278	1,074	0	165	0	–10	0	48	278	872
Slovenia	..	..	..	321	..	..	..	..	..	..
South Africa	..	3,610	..	1,725	..	623	..	1,393	..	–131
Spain	..	..	13,984	5,556	..	..	..	..	..	..
Sri Lanka	54	574	43	430	0	50	0	98	11	–4
Sudan	0	0	0	0	0	0	0	0	0	0
Sweden	..	..	1,982	9,867	..	..	..	..	..	..
Switzerland	..	..	4,961	..	..	..	..	..	..	..
Syrian Arab Republic	18	69	71	80	0	0	0	0	–53	–11
Tajikistan	..	20	..	20	..	0	..	0	..	0
Tanzania	5	143	0	158	0	0	0	0	5	–15
Thailand	4,399	3,444	2,444	3,745	–87	1,726	449	–308	1,593	–1,719
Togo	0	–6	0	0	0	0	0	0	0	–6
Trinidad and Tobago	–69	96	109	340	–52	–150	0	0	–126	–94
Tunisia	–122	903	76	316	–60	586	0	0	–138	1
Turkey	1,782	12,221	684	805	597	1,975	35	577	466	8,864
Turkmenistan	..	847	..	85	..	0	..	0	..	762
Uganda	16	179	0	180	0	0	0	0	16	–1
Ukraine	..	1,419	..	623	..	0	..	0	..	796
United Arab Emirates	..	..	..	..	..	..	..	..	..	..
United Kingdom	..	..	32,518	38,081	..	..	..	..	..	..
United States	..	..	47,918	93,448	..	..	..	..	..	..
Uruguay	–192	632	0	160	–16	449	0	2	–176	22
Uzbekistan	..	435	..	285	..	0	..	0	..	150
Venezuela	–126	6,281	451	5,087	345	–173	0	429	–922	938
Vietnam	16	1,994	16	1,800	0	0	0	–94	0	287
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	30	–138	–131	–138	0	0	0	0	161	0
Yugoslavia, FR (Serb./Mont.)	..	0	..	0	..	0	..	0	..	0
Zambia	194	79	203	70	0	0	0	0	–9	9
Zimbabwe	85	32	–12	70	–30	–30	0	10	128	–18
World	.. s	.. s	192,662 s	394,476 s	.. s	.. s	.. s	.. s	.. s	.. s
Low income	3,502	17,023	1,142	10,622	116	2,309	105	2,373	2,139	1,718
Middle income	38,398	268,863	22,545	149,957	894	37,579	2,134	26,561	12,826	54,766
Lower middle income	..	..	..	..	..	..	..	..	..	..
Upper middle income	..	..	..	..	..	..	..	..	..	..
Low & middle income	41,900	285,885	23,687	160,579	1,010	39,888	2,239	28,934	14,964	56,484
East Asia & Pacific	17,664	91,188	10,347	61,440	–952	13,309	1,053	7,936	7,216	8,503
Europe & Central Asia	7,695	49,875	1,097	22,314	1,893	8,658	185	4,808	4,520	14,095
Latin America & Carib.	12,411	118,918	8,188	61,573	101	12,763	896	9,947	3,226	34,636
Middle East & N. Africa	668	8,120	2,757	5,368	–148	1,621	0	2,259	–1,941	–1,128
South Asia	2,174	11,110	464	4,662	147	2,344	105	2,477	1,458	1,627
Sub-Saharan Africa	1,288	6,674	834	5,222	–31	1,193	0	1,507	485	–1,248
High income	..	..	168,975	233,897	..	..	..	..	..	..
Europe EMU	..	..	53,165	49,717	..	..	..	..	..	..

a. Data prior to 1992 include Eritrea.

Global financial flows 6.7

About the data

The data on foreign direct investment are based on balance of payments data reported by the International Monetary Fund (IMF), supplemented by data on net foreign direct investment reported by the Organisation for Economic Co-operation and Development (OECD) and official national sources. The internationally accepted definition of foreign direct investment is that provided in the fifth edition of the IMF's *Balance of Payments Manual* (1993). The OECD has also published a definition, in consultation with the IMF, Eurostat, and the United Nations. Foreign direct investment has three components: equity investment, reinvested earnings, and short- and long-term intercompany loans between parent firms and foreign affiliates. However, many countries fail to report reinvested earnings, and the definition of long-term loans differs among countries. Foreign direct investment, as distinguished from other kinds of international investment, is made to establish a lasting interest in or effective management control over an enterprise in another country. As a guideline, the IMF suggests that investments should account for at least 10 percent of the voting stock to be counted as foreign direct investment. In practice, many countries set a higher threshold. Because of the multiplicity of sources and differences in definitions and reporting methods, there may be more than one estimate of foreign direct investment for a country and data may not be comparable across countries.

Foreign direct investment data do not give a complete picture of international investment in an economy. Balance of payments data on foreign direct investment do not include capital raised in the host economies, which has become an important source of financing for investment projects in some developing countries. There is also increasing awareness that foreign direct investment data are limited because they capture only cross-border investment flows involving equity participation and omit nonequity cross-border transactions such as intrafirm flows of goods and services. For a detailed discussion of the data issues see the World Bank's *World Debt Tables 1993–94* (volume 1, chapter 3).

Portfolio flow data are compiled from several official and market sources, including Euromoney databases and publications, Micropal, Lipper Analytical Services, published reports of private investment houses, central banks, national securities and exchange commissions, national stock exchanges, and the World Bank's Debtor Reporting System (DRS).

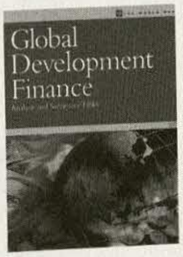
Gross statistics on international bond and equity issues are produced by aggregating individual transactions reported by market sources. Transactions of public and publicly guaranteed bonds are reported through the DRS by World Bank member economies that have received either International Bank for Reconstruction and Development (IBRD) loans or International Development Association (IDA) credits. Information on private nonguaranteed bonds is collected from market sources, because official national sources reporting to the DRS are not asked to report the breakdown between private nonguaranteed bonds and private nonguaranteed loans. Information on transactions by nonresidents in local equity markets is gathered from national authorities, investment positions of mutual funds, and market sources.

The volume of portfolio investment reported by the World Bank generally differs from that reported by other sources because of differences in the classification of economies, in the sources, and in the method used to adjust and disaggregate reported information. Differences in reporting arise particularly for foreign investments in local equity markets, where clarity, adequate disaggregation, and comprehensive and periodic reporting are lacking in many developing economies. By contrast, capital flows through international debt and equity instruments are well recorded, and the differences in reporting lie primarily in differences in the classification of economies, in the exchange rates used, in whether particular tranches of the transactions are included, or in the treatment of certain offshore issuances.

Definitions

- **Net private capital flows** consist of private debt and nondebt flows. Private debt flows include commercial bank lending, bonds, and other private credits; nondebt private flows are foreign direct investment and portfolio equity investment. • **Foreign direct investment** is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. • **Portfolio investment flows** are net and include non-debt-creating portfolio equity flows (the sum of country funds, depository receipts, and direct purchases of shares by foreign investors) and portfolio debt flows (bond issues purchased by foreign investors). • **Bank and trade-related lending** covers commercial bank lending and other private credits.

Data sources



The data in this table are compiled from a variety of public and private sources, including the World Bank's Debtor Reporting System, the IMF's International Financial Statistics and Balance of Payments databases, and other sources mentioned in *About the data.* These data are also published in the World Bank's *Global Development Finance 1999*.

6.8 Net financial flows from Development Assistance Committee members

Net flows to part I countries	Official development assistance				Other official flows	Private flows					Net grants by NGOs	Total net flows
	Total	Bilateral grants	Bilateral loans	Contributions to multilateral institutions		Total	Foreign direct investment	Bilateral portfolio investment	Multilateral portfolio investment	Private export credits		
$ millions, 1997												
Australia	1,061	790	–14	285	97	..	..	..	..	..	151	1,309
Austria	527	253	53	221	148	952	225	–863	..	1,590	33	1,661
Belgium	764	459	–21	326	–2	–12,277	371	–12,319	..	–330	40	–11,475
Canada	2,045	1,305	–91	830	1,054	6,732	5,406	1,250	..	76	175	10,006
Denmark	1,637	1,012	–2	627	143	118	136	–20	20	–18	30	1,928
Finland	379	204	–4	179	59	–23	6	–620	..	591	10	425
France	6,307	4,906	–130	1,530	94	..	..	..	..	..	0	6,401
Germany	5,857	3,406	233	2,218	–482	13,417	4,801	6,877	205	1,534	948	19,740
Ireland	187	121	0	67	0	80	..	80	..	..	56	323
Italy	1,266	361	93	812	962	5,848	1,449	5,416	..	–1,017	41	8,116
Japan	9,358	4,985	1,568	2,806	3,975	15,953	10,274	7,090	–1,411	..	223	29,509
Luxembourg	95	66	0	28	0	..	..	..	..	..	6	100
Netherlands	2,947	2,302	–169	814	–193	3,827	4,557	–74	–805	148	–267	6,313
New Zealand	154	113	0	41	0	13	13	..	..	..	15	182
Norway	1,306	907	9	390	0	221	116	..	..	105	121	1,648
Portugal	251	115	48	88	82	1,000	702	–298	..	596	4	1,337
Spain	1,234	540	226	469	0	6,054	6,054	..	..	..	123	7,411
Sweden	1,731	1,209	0	522	1	333	482	–44	..	–105	27	2,092
Switzerland	911	586	–11	335	0	–4,427	–1,997	–2,560	–338	467	60	–3,457
United Kingdom	3,433	1,926	53	1,454	–113	16,025	12,685	3,340	..	..	314	19,659
United States	6,878	5,633	–694	1,939	287	65,308	29,962	36,416	–3,768	2,698	2,518	74,991
Total	**48,324**	**31,197**	**1,147**	**15,981**	**6,113**	**119,152**	**75,242**	**43,673**	**–6,097**	**6,335**	**4,628**	**178,217**

Net flows to part II countries	Official aid				Other official flows	Private flows					Net grants by NGOs	Total net flows
	Total	Bilateral grants	Bilateral loans	Contributions to multilateral institutions		Total	Foreign direct investment	Bilateral portfolio investment	Multilateral portfolio investment	Private export credits		
$ millions, 1997												
Australia	0	0	0	0	0	..	..	..	..	..	0	0
Austria	181	145	0	36	0	726	728	0	..	–2	0	907
Belgium	59	11	0	48	–3	14,612	709	13,912	..	–8	0	14,668
Canada	157	157	0	0	–86	13	..	..	..	13	0	84
Denmark	133	78	14	41	24	201	201	..	..	..	2	360
Finland	71	41	10	20	–30	358	318	–5	..	46	0	399
France	308	..	..	..	0	5,395	1,743	3,173	..	479	0	5,703
Germany	660	419	–117	358	465	7,210	2,909	3,785	..	516	81	8,417
Ireland	1	1	0	0	0	..	..	..	..	..	0	1
Italy	241	5	1	235	15	3,269	956	2,798	..	–485	0	3,525
Japan	84	62	6	17	397	3,161	4,860	–1,699	..	..	0	3,642
Luxembourg	2	2	0	0	0	..	..	..	..	..	0	2
Netherlands	7	7	0	0	119	3,451	3,454	..	..	–3	0	3,577
New Zealand	0	0	0	0	0	0	..	0	..	..	0	0
Norway	56	56	0	0	0	286	206	..	..	81	0	342
Portugal	18	0	0	18	2	117	96	..	..	21	0	137
Spain	3	3	0	0	0	389	389	..	..	0	0	391
Sweden	148	104	0	44	12	577	424	..	..	153	0	738
Switzerland	75	75	0	0	2	3,896	66	3,830	..	..	9	3,982
United Kingdom	337	142	–2	197	–1	12,460	0	12,460	..	..	22	12,818
United States	2,516	2,537	–21	0	7	14,740	11,352	2,723	..	665	1,047	18,310
Total	**5,056**	**3,844**	**–110**	**1,014**	**923**	**70,863**	**28,409**	**40,978**	**..**	**1,476**	**1,161**	**78,002**

Net financial flows from Development Assistance Committee members 6.8

About the data

The high-income members of the Organisation for Economic Co-operation and Development (OECD) are the main (though not only) source of external finance for developing countries. This table provides an overview of the flow of financial resources from members of the OECD's Development Assistance Committee (DAC) to official and private recipients in developing countries. DAC exists to help its member countries coordinate their development assistance and to encourage the expansion and improve the effectiveness of the aggregate resources made available to developing and transition economies. In this capacity DAC monitors the flow of all financial resources, but its main concern is official development assistance (ODA). DAC has three criteria for ODA: It is undertaken by the official sector. It promotes economic development or welfare as a main objective. It is provided on concessional terms, with a grant element of at least 25 percent on loans.

This definition excludes military aid and nonconcessional flows from official creditors, which are considered other official flows. It includes capital projects, food aid, emergency relief, peacekeeping efforts, and technical cooperation. Also included are contributions to multilateral institutions, such as the United Nations and its specialized agencies, and concessional funding to the multilateral development banks, including the World Bank's International Development Association.

DAC maintains a list of countries and territories that are aid recipients. Part I of the list comprises countries and territories considered by DAC members to be eligible for ODA. Part II of the list, created after the collapse of the Soviet Union to monitor the flow of concessional assistance to transition economies, consists of countries that are not considered eligible for ODA but that nevertheless receive ODA-like flows. Under a procedure agreed to in 1993, countries with relatively higher incomes are moving from part I to part II status. To differentiate assistance to the two groups of recipients, ODA-like flows to part II countries are termed official aid.

The data in the table were compiled from replies by DAC member countries to questionnaires issued by the DAC Secretariat. Net flows of resources are defined as gross disbursements of grants and loans minus repayments on earlier loans. Because the data are based on donor country reports, they do not provide a complete picture of the resources received by developing countries, for three reasons. First, flows from DAC members are only part of the aggregate resource flows to developing countries. Second, the data that record contributions to multilateral institutions measure the flow of resources made available to those institutions by DAC members, not the flow of resources from those institutions to developing countries. Third, because some of the countries and territories on the DAC recipient list are normally classified as high income, the reported flows may overstate the resources available to low- and middle-income economies. High-income countries receive only a small fraction of all development assistance, however.

Net disbursements of ODA by some important donor countries that are not DAC members are shown in table 6.8a.

Table 6.8a

Official development assistance from non-DAC donors

Net disbursements ($ millions)

	1993	1994	1995	1996	1997
OECD members (non-DAC)					
Czech Republic	20	25	..	..	..
Greece	90[a]	122[a]	152[a]	184	173
Iceland	7	6	..	..	..
Korea, Rep.	112	140	116	159	186
Turkey	73	58	107	88	..
Arab countries					
Kuwait	395	555	384	426	373
Saudi Arabia	549	317	192	327	251
United Arab Emirates	239	100	65	31	..
Other donors					
India	25	28	..	..	..

Note: China also provides aid but does not disclose the amount.

a. Comprises total aid disbursements to both part I countries (official development assistance) and part II countries (official aid).

Source: OECD.

Definitions

• **Official development assistance** (ODA) comprises grants and loans, net of repayments, that meet the DAC definition of ODA and are made to countries and territories in part I of the DAC list of aid recipients. • **Official aid** comprises grants and ODA-like loans, net of repayments, to countries and territories in part II of the DAC list of aid recipients. • **Bilateral grants** are transfers in money or in kind for which no repayment is required. • **Bilateral loans** are loans extended by governments or official agencies that have a grant element of at least 25 percent and for which repayment is required in convertible currencies or in kind. • **Contributions to multilateral institutions** are concessional funding received by multilateral institutions from DAC members in the form of grants or capital subscriptions. • **Other official flows** are transactions by the official sector whose main objective is other than development or whose grant element is less than 25 percent. • **Private flows** consist of flows at market terms financed from private sector resources. They include changes in holdings of private long-term assets by residents of the reporting country. • **Foreign direct investment** is investment by residents of DAC member countries to acquire a lasting management interest (at least 10 percent of voting stock) in an enterprise operating in the recipient country. The data in the table reflect changes in the net worth of subsidiaries in recipient countries whose parent company is in the DAC source country. • **Bilateral portfolio investment** covers bank lending and the purchase of bonds, shares, and real estate by residents of DAC member countries in recipient countries. • **Multilateral portfolio investment** records the transactions of private banks and nonbanks in DAC member countries in the securities issued by multilateral institutions. • **Private export credits** are loans that are extended to recipient countries by the private sector in DAC member countries for the purpose of promoting trade and are supported by an official guarantee. • **Net grants by NGOs** are private grants by nongovernmental organizations, net of subsidies from the official sector. • **Total net flows** comprise ODA or official aid flows, other official flows, private flows, and net grants by NGOs.

Data sources

Data on financial flows are compiled by the Development Assistance Committee of the OECD and published in its annual statistical report, *Geographical Distribution of Financial Flows to Aid Recipients*, and the DAC chairman's annual report, *Development Co-operation*.

6.9 Aid flows from Development Assistance Committee members

Net flows to part I countries	Net official development assistance $ millions 1992	 $ millions 1997	 % of GNP 1992	 % of GNP 1997	 annual average % change in volume[a] 1991–92 to 1996–97	 Per capita of donor country[a] $ 1992	 Per capita of donor country[a] $ 1997	Aid appropriations % of central government budget 1992	 % of central government budget 1997	Untied aid % of total ODA commitments 1992	 % of total ODA commitments 1997
Australia	1,015	1,061	0.37	0.28	–1.2	57	–1	0.0	1.1	28.1	28.3
Austria	556	527	0.30	0.26	–2.8	71	–3	0.8	0.0	71.5	0.0
Belgium	870	764	0.39	0.31	–2.7	87	–3	0.0	0.0	9.3	0.0
Canada	2,515	2,045	0.46	0.34	–4.0	92	–4	1.7	1.3	24.5	15.2
Denmark	1,392	1,637	1.02	0.97	3.7	270	4	2.6	2.7	0.0	34.7
Finland	644	379	0.64	0.33	–11.9	127	–12	1.8	1.1	37.8	17.9
France	8,270	6,307	0.63	0.45	–4.2	144	–4	0.0	0.0	22.8	0.0
Germany	7,583	5,857	0.38	0.28	–3.9	94	–4	0.0	0.0	30.5	24.5
Ireland	70	187	0.16	0.31	20.1	20	20	0.0	0.0	0.0	0.0
Italy	4,122	1,266	0.34	0.11	–12.3	72	–12	0.8	0.0	16.5	0.0
Japan	11,151	9,358	0.30	0.22	–5.8	90	–6	1.4	0.0	56.7	81.0
Luxembourg	38	95	0.26	0.55	15.0	97	15	0.0	0.0	37.7	0.0
Netherlands	2,753	2,947	0.86	0.81	1.4	181	1	0.0	0.0	19.5	80.7
New Zealand	97	154	0.26	0.26	0.9	28	1	0.4	0.6	63.9	0.0
Norway	1,273	1,306	1.16	0.86	0.5	296	0	1.7	1.8	44.2	47.9
Portugal	293	250	0.35	0.25	–2.6	29	–3	0.0	0.0	1.7	72.8
Spain	1,518	1,234	0.27	0.23	–0.7	39	–1	1.0	0.9	0.0	0.0
Sweden	2,460	1,731	1.03	0.79	–2.5	283	–3	0.0	0.0	61.3	0.0
Switzerland	1,139	911	0.45	0.34	–3.1	165	–3	3.2	3.2	50.4	0.0
United Kingdom	3,243	3,433	0.31	0.26	–0.3	56	0	0.0	1.1	17.7	23.7
United States	11,709	6,878	0.20	0.09	–8.9	46	–9	1.5	1.1	25.9	0.0
Total	**62,711**	**48,324**	**0.34**	**0.22**	**–4.6**	**78**	**–5**	**1.3**	**1.2**	**32.9**	**31.0**

Net flows to part II countries	Net official aid $ millions 1992	 $ millions 1997	 % of GNP 1992	 % of GNP 1997	 annual average % change in volume[a] 1991–92 to 1996–97	 Per capita of donor country[a] $ 1992	 Per capita of donor country[a] $ 1997
Australia	5	0	0.00	0.00	–10.7	0	0
Austria	349	181	0.19	0.09	–13.4	44	22
Belgium	135	59	0.06	0.02	–27.6	13	6
Canada	260	157	0.05	0.03	–2.6	9	5
Denmark	82	133	0.06	0.08	12.1	16	25
Finland	40	71	0.04	0.06	–2.5	8	14
France	364	308	0.03	0.02	2.7	6	5
Germany	3,344	660	0.17	0.03	–26.6	42	8
Ireland	10	1	0.02	0.00	–48.6	3	0
Italy	334	241	0.03	0.02	–5.7	6	4
Japan	238	84	0.01	0.00	–9.6	2	1
Luxembourg	5	2	0.04	0.01	–19.8	13	6
Netherlands	152	7	0.05	0.00	–50.5	10	0
New Zealand	1	0	0.00	0.00	–60.9	0	0
Norway	64	55	0.06	0.04	3.6	15	13
Portugal	18	18	0.02	0.02	–4.6	2	2
Spain	102	3	0.02	0.00	–21.3	3	0
Sweden	337	148	0.14	0.07	–1.9	39	17
Switzerland	90	75	0.04	0.03	1.0	13	11
United Kingdom	337	337	0.03	0.03	0.3	6	6
United States	682	2,516	0.01	0.03	10.2	3	9
Total	**6,948**	**5,056**	**0.04**	**0.02**	**–9.2**	**9**	**6**

a. At 1997 exchange rates and prices.

Aid flows from Development Assistance Committee members 6.9

About the data

As part of its work the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD) assesses the aid performance of member countries relative to the size of their economies. As measured here, aid comprises bilateral disbursements of concessional financing to recipient countries plus the provision by donor governments of concessional financing to multilateral institutions. Volume measures, in constant prices and exchange rates, are used to measure the change in real resources provided over time. Aid flows to part I recipients—official development assistance (ODA)—are tabulated separate from official aid to part II recipients (see *About the data* for table 6.8 for more information on the distinction between ODA and official aid).

Measures of aid flows from the perspective of donors differ from aid receipts by recipient countries. This is because the concessional funding received by multilateral institutions from donor countries is recorded as an aid disbursement by the donor when the funds are deposited with the multilateral institution and recorded as a resource receipt by the recipient country when the multilateral institution makes a disbursement.

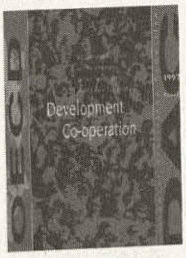
Aid-to-GNP ratios, aid per capita, and aid appropriations as a percentage of donor government budgets are calculated by the OECD. The denominators used in calculating these ratios may differ from corresponding values elsewhere in this book because of differences in timing or definitions.

The proportion of untied aid is reported here because tying arrangements require recipients to purchase goods and services from the donor country or from a specified group of countries. Tying arrangements may be justified on the grounds that they prevent a recipient from misappropriating or mismanaging aid receipts, but they may also be motivated by a desire to benefit suppliers in the donor country. The same volume of aid may have different purchasing power, depending on the relative costs of suppliers in countries to which the aid is tied and the degree to which each recipient's aid basket is untied. Thus tying arrangements may prevent recipients from obtaining the best value for their money and so reduce the value of the aid received.

Definitions

- **Net official development assistance** and **net official aid** record the actual international transfer by the donor of financial resources or of goods or services valued at the cost to the donor, less any repayments of loan principal during the same period. Data are shown at current prices and dollar exchange rates.
- **Aid as a percentage of GNP** shows the donor's contributions of ODA or official aid as a share of its GNP. • **Annual average percentage change in volume** and **aid per capita of donor country** are calculated using 1996 exchange rates and prices. • **Aid appropriations** are the share of ODA or official aid appropriations in the donor's national budget.
- **Untied aid** is the share of aid that is not subject to restrictions by donors on procurement sources.

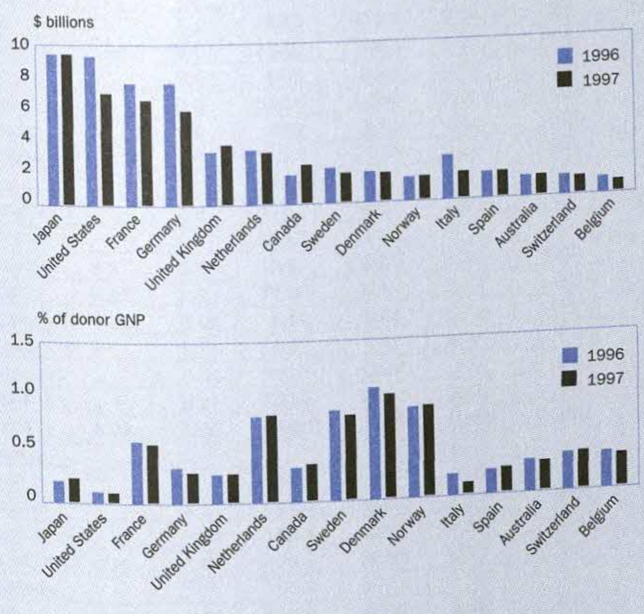
Data sources



The data in this table appear in the DAC chairman's report, *Development Co-operation*. The OECD also makes its data available on diskette, magnetic tape, and the Internet.

Figure 6.9

Aid flows fell again in 1997



Aid fell both in dollar amount and as a share of GNP for most donors.

Source: OECD and World Bank staff estimates.

6.10 Aid dependency

	Net official development assistance and official aid		Aid per capita		Aid dependency ratios							
					Aid as % of GNP		Aid as % of gross domestic investment		Aid as % of imports of goods and services		Aid as % of central government expenditures	
	$ millions		$									
	1992	1997	1992	1997	1992	1997	1992	1997	1992	1997	1992	1997
Albania	430.1	169.3	135	51	63.9	6.7	1,156.7	56.6	64.5	20.6	..	..
Algeria	406.4	248.2	15	8	0.9	0.6	2.8	2.0	3.2	1.9	..	..
Angola	350.7	435.7	35	37	10.0	9.9	167.7	23.0	7.3	7.1	..	..
Argentina	292.6	221.6	9	6	0.1	0.1	0.8	0.3	1.3	0.5	1.1	0.5
Armenia	22.5	169.5	6	45	2.4	9.7	120.7	110.9	..	17.1	..	..
Australia												
Austria												
Azerbaijan	37.0	182.4	5	24	0.6	4.2	..	14.8	4.2	9.2	..	..
Bangladesh	1,824.8	1,010.2	16	8	5.6	2.3	30.8	11.7	44.4	12.9	..	..
Belarus	273.1	42.6	26	4	0.9	0.2	2.8	0.7	7.7	0.5	..	..
Belgium												
Benin	270.7	225.4	54	39	17.1	10.7	121.1	56.9	34.7	30.8	..	..
Bolivia	677.5	716.8	98	92	12.7	9.2	73.7	48.1	43.2	30.3	59.2	41.0
Bosnia and Herzegovina[a]	9.7	874.4	3	373	..	..	..	..	..	..	..	..
Botswana	113.8	124.8	84	81	2.8	2.6	9.8	9.5	4.8	..	7.5	..
Brazil	–234.4	487.4	–2	3	–0.1	0.1	–0.3	0.3	–0.6	0.5	–0.2	..
Bulgaria	147.9	209.9	17	25	1.4	2.2	7.2	17.6	2.7	3.4	4.2	6.2
Burkina Faso	438.9	370.5	47	35	22.1	15.5	103.4	60.8	64.0	50.1	86.2	..
Burundi	311.9	119.3	54	19	29.1	12.6	192.0	182.7	90.0	76.5	85.4	52.0
Cambodia	206.8	373.8	22	36	10.5	12.3	106.7	76.3	39.2	28.5	..	..
Cameroon	716.2	501.2	59	36	6.7	5.9	43.9	34.0	26.0	18.8	32.8	..
Canada												
Central African Republic	180.4	91.9	59	27	12.7	9.2	103.5	100.4	49.6	36.0	..	..
Chad	240.9	224.9	40	31	13.5	14.3	158.5	72.4	50.0	37.4	..	..
Chile	135.7	136.6	10	9	0.3	0.2	1.4	0.7	1.0	0.5	1.6	0.9
China	3,055.3	2,054.4	3	2	0.7	0.2	2.0	0.6	3.9	1.1	7.9	..
Hong Kong, China	–39.0	8.5	–7	1	0.0	0.0	–0.1	0.0	..	..	..	..
Colombia	246.4	274.2	7	7	0.5	0.3	2.9	1.5	2.3	1.2	3.7	..
Congo, Dem. Rep.	269.8	168.0	7	4	3.3	3.2	47.6	38.7	12.5	7.8	19.0	..
Congo, Rep.	113.7	268.1	48	99	4.4	14.7	17.9	44.8	7.3	13.2	..	..
Costa Rica	142.6	–1.9	45	–1	2.2	0.0	7.3	–0.1	4.4	0.0	8.9	..
Côte d'Ivoire	758.2	444.7	61	31	7.7	4.7	98.2	27.1	16.7	9.7	..	..
Croatia[a]	0.0	44.0	0	9	..	0.2	0.0	..	..	0.4	..	0.5
Cuba	24.9	67.3	2	6	..	..	..	..	..	..	..	..
Czech Republic	130.6	107.2	13	10	0.5	0.2	1.7	0.6	..	0.3	..	0.6
Denmark												
Dominican Republic	56.1	75.7	8	9	0.7	0.5	2.8	2.1	1.8	1.0	4.8	..
Ecuador	244.8	175.0	23	15	2.0	0.9	9.1	4.4	6.1	2.4	11.9	..
Egypt, Arab Rep.	3,604.0	1,949.2	66	32	9.0	2.5	47.3	14.6	22.4	10.0	21.9	..
El Salvador	407.0	299.5	77	51	6.9	2.7	36.8	17.7	19.8	7.4	..	..
Eritrea	..	123.1	..	33	..	14.8	..	46.0	..	20.6	..	..
Estonia	104.4	64.6	68	44	2.5	1.4	9.2	4.6	14.4	1.5	..	4.4
Ethiopia	1,182.7	637.2	22	11	21.4	10.1	231.1	52.3	101.4	36.3	89.4	..
Finland												
France												
Gabon	69.5	39.8	68	35	1.4	0.9	5.5	2.9	2.6	1.4	..	..
Gambia, The	113.1	41.3	113	35	33.0	10.3	146.7	57.3	44.9	14.1	..	..
Georgia	21.0	247.2	4	46	0.4	4.7	1.3	65.9	..	19.7	..	..
Germany												
Ghana	615.6	497.7	39	28	9.8	7.4	75.0	30.0	31.4	17.8	53.9	..
Greece												
Guatemala	199.6	303.0	22	29	1.9	1.7	10.4	12.4	6.5	6.7	..	..
Guinea	450.3	381.9	74	55	14.3	10.3	78.6	45.2	41.7	40.0	72.6	..
Guinea-Bissau	108.5	125.5	107	110	51.0	49.9	99.0	197.6	85.2	103.7	..	..
Haiti	102.7	332.2	15	44	5.3	11.8	149.1	115.7	39.4	40.5	..	..
Honduras	379.4	307.5	73	51	11.7	6.7	42.8	21.4	24.1	11.0	..	..

Aid dependency 6.10

	Net official development assistance and official aid		Aid per capita		Aid dependency ratios							
					Aid as % of GNP		Aid as % of gross domestic investment		Aid as % of imports of goods and services		Aid as % of central government expenditures	
	$ millions		$									
	1992	1997	1992	1997	1992	1997	1992	1997	1992	1997	1992	1997
Hungary	223.0	164.2	22	16	0.6	0.4	3.7	1.3	1.5	0.6	1.1	0.8
India	2,395.6	1,678.3	3	2	1.0	0.4	4.1	1.8	7.7	2.7	5.2	2.6
Indonesia	2,091.9	849.5	11	4	1.6	0.4	5.3	1.3	5.1	1.2	8.1	..
Iran, Islamic Rep.	106.8	196.6	2	3	..	0.2	..	..	0.4	1.1	0.1	0.5
Iraq	140.0	280.8	7	13	..	..	..	..	..	..	..	..
Ireland												
Israel	2,065.8	1,191.6	403	204	3.2	1.2	12.6	5.6	7.4	2.7	6.5	2.5
Italy												
Jamaica	122.8	70.9	50	28	4.3	1.8	11.7	5.0	4.7	1.6	..	..
Japan												
Jordan	425.2	463.0	114	104	8.7	6.8	23.9	23.1	8.9	7.6	26.7	..
Kazakhstan	11.6	132.2	1	8	0.0	0.6	0.1	3.8	0.2	1.5	..	..
Kenya	886.7	458.9	35	16	11.7	4.6	63.8	23.4	35.0	11.4	44.7	..
Korea, Dem. Rep.	32.2	201.6	2	9	..	..	..	..	..	..	..	..
Korea, Rep.	–3.0	–158.3	0	–3	0.0	0.0	0.0	–0.1	0.0	–0.1	0.0	–0.2
Kuwait	2.4	2.4	2	1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Kyrgyz Republic	23.8	240.4	5	52	1.1	14.1	5.3	62.9	6.0	27.1	..	..
Lao PDR	165.3	342.2	39	71	14.7	19.5	..	68.1	53.6	45.9	..	..
Latvia	84.0	80.8	32	33	1.3	1.5	3.2	7.4	8.4	2.3	..	4.6
Lebanon	123.5	239.3	33	58	2.1	1.6	8.9	6.0	2.8	2.8	..	..
Lesotho	146.7	93.5	81	46	13.5	7.4	28.3	11.5	14.0	7.2	39.8	24.7
Libya	6.4	9.2	1	2	..	..	..	..	..	..	..	..
Lithuania	93.9	101.8	25	27	0.8	1.1	5.3	4.0	..	1.6	..	3.9
Macedonia, FYR[a]	..	149.6	..	75	..	6.9	..	34.9	..	7.7	..	..
Madagascar	362.8	837.8	30	59	12.7	24.3	107.0	200.8	41.1	71.4	64.4	..
Malawi	579.1	348.3	64	34	32.9	14.1	161.4	112.7	69.2	27.8	..	..
Malaysia	205.8	–240.9	11	–11	0.4	–0.3	1.0	–0.6	0.4	–0.2	1.2	–1.2
Mali	435.3	455.4	49	44	15.5	18.4	69.8	77.2	43.0	47.5	..	..
Mauritania	202.2	250.1	94	102	18.0	23.9	83.0	130.3	30.2	56.8	..	..
Mauritius	52.6	41.8	49	36	1.6	1.0	5.6	3.4	2.5	1.5	7.1	4.2
Mexico	316.8	107.7	4	1	0.1	0.0	0.4	0.1	0.4	0.1	0.6	..
Moldova	9.7	63.0	2	15	0.3	3.5	0.6	13.9	..	4.2	..	..
Mongolia	123.4	252.5	53	99	..	25.6	..	130.7	25.6	44.9	51.5	..
Morocco	947.1	462.1	38	17	3.5	1.4	14.3	6.7	9.1	3.9	11.1	..
Mozambique	1,474.2	963.2	100	58	105.2	37.4	343.9	118.5	121.5	81.8	..	..
Myanmar	115.3	61.7	3	1	..	..	..	..	9.1	2.5	2.5	..
Namibia	144.3	165.8	101	102	4.9	5.0	23.3	25.6	7.3	7.9	12.4	..
Nepal	462.0	414.7	23	19	13.1	8.4	62.8	39.3	49.5	22.0	78.5	50.6
Netherlands												
New Zealand												
Nicaragua	660.6	421.7	163	90	49.0	22.7	186.1	..	46.5	22.8	119.6	..
Niger	370.5	341.0	45	35	16.0	18.6	291.9	170.2	56.9	72.5	..	..
Nigeria	262.0	201.6	3	2	0.9	0.5	3.7	3.3	2.3	1.1	..	..
Norway												
Oman	37.5	19.7	20	9	0.4	..	1.9	..	0.7	0.3	0.8	0.4
Pakistan	1,007.4	597.0	9	5	2.1	1.0	12.4	6.4	7.9	3.5	8.6	4.5
Panama	163.3	128.8	66	47	2.6	1.5	10.4	..	2.1	1.3	9.9	..
Papua New Guinea	448.9	349.4	112	78	11.5	8.7	44.0	20.3	18.4	11.6	32.1	..
Paraguay	105.0	122.1	23	24	1.7	1.2	7.8	5.3	3.9	2.4	12.0	..
Peru	410.2	489.0	18	20	1.0	0.8	5.9	3.1	5.7	3.7	6.1	4.8
Philippines	1,718.7	694.2	26	9	3.2	0.8	15.2	3.4	9.0	1.3	16.5	4.4
Poland	1,438.6	641.4	37	17	1.7	0.5	11.2	2.1	6.3	1.3	..	1.1
Portugal												
Puerto Rico												
Romania	238.3	203.4	10	9	1.0	0.6	3.0	2.7	3.6	1.6	3.1	..
Russian Federation	1,938.1	719.0	13	5	0.5	0.2	1.3	0.7	3.6	0.7	..	..

6.10 Aid dependency

	Net official development assistance and official aid		Aid per capita		Aid dependency ratios							
	$ millions		$		Aid as % of GNP		Aid as % of gross domestic investment		Aid as % of imports of goods and services		Aid as % of central government expenditures	
	1992	**1997**	**1992**	**1997**	**1992**	**1997**	**1992**	**1997**	**1992**	**1997**	**1992**	**1997**
Rwanda	353.8	591.5	48	75	17.5	32.0	124.9	293.9	95.3	115.5	86.0	..
Saudi Arabia	56.0	14.8	3	1	0.0	0.0	0.2	0.1	0.1	0.0	..	..
Senegal	675.7	427.0	88	49	17.4	9.6	118.2	50.3	33.5	22.7	..	..
Sierra Leone	135.1	130.1	32	27	21.7	16.0	237.3	–310.7	62.2	86.8	118.3	89.1
Singapore	19.9	0.8	7	0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0
Slovak Republic	63.8	67.4	12	13	0.5	0.3	1.9	1.0	..	0.5	..	..
Slovenia[a]	..	96.8	..	49	..	0.5	..	2.2	..	0.9	..	..
South Africa	..	497.5	..	12	..	0.4	..	2.4	..	1.3	..	1.1
Spain												
Sri Lanka	641.8	346.6	37	19	6.7	2.3	27.2	9.4	15.7	5.0	24.5	8.9
Sudan	550.1	187.7	22	7	9.9	2.1	..	..	26.3	6.9	..	..
Sweden												
Switzerland												
Syrian Arab Republic	117.7	199.3	9	13	1.0	1.2	3.8	3.8	2.2	3.3	1.5	..
Tajikistan	11.9	101.1	2	17	0.4	5.0	..	..	..	11.6	..	..
Tanzania	1,349.7	963.8	50	31	28.8	13.1	102.6	68.4	70.5	45.3	..	..
Thailand	772.2	626.4	13	10	0.7	0.4	1.7	1.2	1.5	0.8	4.6	2.2
Togo	223.9	123.8	60	29	13.4	8.6	83.6	53.6	27.7	16.2	..	..
Trinidad and Tobago	9.1	33.1	7	25	0.2	0.6	1.1	2.6	0.4	1.0	..	..
Tunisia	390.3	194.3	46	21	2.6	1.1	8.6	3.9	5.0	2.0	7.9	..
Turkey	269.0	2.2	5	0	0.2	0.0	0.7	0.0	0.9	0.0	0.8	..
Turkmenistan	8.6	10.9	2	2	0.1	0.4	..	..	0.7	1.1	..	..
Uganda	738.0	840.2	42	41	26.6	12.8	162.0	83.6	109.8	49.3	..	..
Ukraine	559.2	178.8	11	4	0.6	0.4	1.8	1.8	..	0.8	..	..
United Arab Emirates	–8.3	3.8	–4	1	0.0	..	–0.1	..	..	..	–0.2	..
United Kingdom												
United States												
Uruguay	73.1	56.9	23	17	0.6	0.3	4.6	2.2	2.5	1.1	2.2	0.9
Uzbekistan	61.7	131.3	3	6	0.3	0.5	2.3	2.8	..	2.8	..	..
Venezuela	41.0	27.6	2	1	0.1	0.0	0.3	0.2	0.2	0.1	0.3	0.2
Vietnam	576.2	1,007.3	8	13	5.8	4.2	33.1	14.0	17.1	7.1	..	..
West Bank and Gaza	..	630.0	..	245	..	..	..	..	..	..	..	..
Yemen, Rep.	283.2	366.5	20	23	5.3	7.3	26.6	30.6	8.2	9.9	6.2	16.3
Yugoslavia, FR (Serb./Mont.)[a]	..	97.4	..	9	..	..	..	..	..	..	..	..
Zambia	1,036.2	618.3	125	65	36.1	16.9	273.8	107.4	53.8	35.3	104.2	..
Zimbabwe	796.5	327.5	77	29	12.3	3.9	58.3	19.7	29.0	7.6	36.2	..
World[b]	**66,064.2 s**	**56,099.3 s**	**14 w**	**11 w**	**1.4 w**	**0.7 w**	**.. w**	**.. w**	**.. w**	**.. w**	**..**	**..**
Low income	26,719.7	22,403.5	15	11	5.0	2.9	24.0	13.2	21.2	10.6	..	..
Middle income[b]	33,611.3	26,033.3	13	9	1.0	0.5	3.7	..	4.0	1.6	..	..
Lower middle income[b]	29,815.2	22,827.8	14	10	1.7	0.9	5.4	2.9	6.9	2.8	..	..
Upper middle income[b]	3,796.1	3,205.5	8	5	0.2	0.1	1.1	..	0.9	0.4	..	..
Low & middle income[b]	65,036.7	53,713.2	15	11	1.7	0.9	6.2	3.3	6.7	2.9	..	..
East Asia & Pacific[b]	9,941.7	7,157.5	6	4	1.2	0.5	..	..	4.0	1.3	..	..
Europe & Central Asia[b]	8,600.9	7,188.6	19	15	0.9	0.5	2.9	2.2	..	1.5	..	..
Latin America & Carib.[b]	5,507.3	6,168.1	12	13	0.4	0.3	2.1	..	2.3	1.4	..	..
Middle East & N. Africa[b]	7,000.8	5,379.9	28	19	2.2	..	9.3	..	4.0	3.1	..	..
South Asia[b]	6,657.3	4,460.1	6	3	1.9	0.8	8.5	3.6	12.1	4.3	..	..
Sub-Saharan Africa[b]	19,712.8	15,860.0	39	26	12.0	5.0	66.1	27.7	27.9	12.7	..	..
High income	2,897.8	2,037.6	..	..	..	..	..	..	..	..	..	..
Europe EMU												

a. Aid to the states of the former Yugoslavia, not otherwise specified, is included in regional and income group aggregates. b. Includes data for economies not specified elsewhere.

Aid dependency 6.10

About the data

Ratios of aid to GNP, investment, imports, or public spending provide a measure of the recipient country's dependency on aid. But care must be taken in drawing policy conclusions. For foreign policy reasons some countries have traditionally received large amounts of assistance. Thus aid dependency ratios may reveal as much about the interests of donors as they do about the needs of recipients. In general, aid dependency ratios in Sub-Saharan Africa are much higher than those in other regions, and they increased during the 1980s. These high ratios are due only in part to the volume of aid flows. Many African countries experienced severe erosion in their terms of trade during the 1980s, which, along with weak policies, contributed to falling incomes, imports, and investment. Thus the increase in aid dependency ratios reflects events affecting both the numerator and the denominator.

As defined here, aid includes official development assistance (ODA) and official aid. The data cover bilateral loans and grants from Development Assistance Committee (DAC) countries, multilateral organizations, and certain Arab countries. They do not reflect aid given by recipient countries to other developing countries. As a result some countries that are net donors (such as Saudi Arabia) are shown in the table as aid recipients. (See table 6.8a for aid disbursement by some non-DAC countries.)

The data in the table do not distinguish among different types of aid (program, project, or food aid, emergency assistance, peacekeeping assistance, or technical cooperation), each of which may have a very different effect on the economy. Technical cooperation expenditures do not always directly benefit the economy to the extent that they defray costs incurred outside the country on the salaries and benefits of technical experts and the overhead costs of firms supplying technical services.

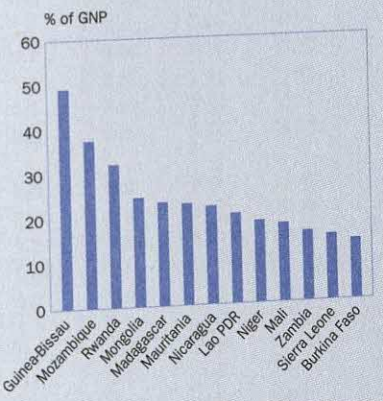
Because the table relies on information from donors, it is not consistent with information recorded by recipients in the balance of payments, which often excludes all or some technical assistance—particularly payments to expatriates made directly by the donor. Similarly, grant commodity aid may not always be recorded in trade data or in the balance of payments. Although ODA estimates in balance of payments statistics are meant to exclude purely military aid, the distinction is sometimes blurred. The definition used by the country of origin usually prevails. The nominal values used here tend to overstate the amount of resources transferred. Changes in international prices and in exchange rates reduce the purchasing power of aid. The practice of tying aid, still prevalent though declining in importance, also reduces the purchasing power of aid (see *About the data* for table 6.9).

The values for population, GNP, gross domestic investment, imports of goods and services, and central government expenditures used in computing the ratios are taken from World Bank and International Monetary Fund databases. The ratios shown may therefore differ somewhat from those computed and published by the Organisation for Economic Co-operation and Development (OECD).

Aid not allocated by country or region—including administrative costs, research into development issues, and aid to nongovernmental organizations—is included in the world total. Thus regional and income group totals do not sum to the world total.

Figure 6.10

Countries receiving aid amounting to more than 15 percent of their GNP



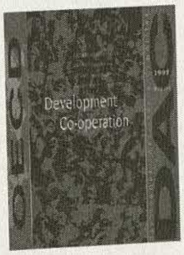
Source: OECD and World Bank staff estimates.

The most aid-dependent countries are in Sub-Saharan Africa.

Definitions

- **Net official development assistance** consists of disbursements of loans (net of repayments of principal) and grants made on concessional terms by official agencies of the members of DAC and certain Arab countries to promote economic development and welfare in recipient economies listed as developing by DAC. Loans with a grant element of more than 25 percent are included in ODA, as are technical cooperation and assistance.
- **Net official aid** refers to aid flows, net of repayments, from official donors to the transition economies of Eastern Europe and the former Soviet Union and to certain advanced developing countries and territories as determined by DAC. Official aid is provided under terms and conditions similar to those for ODA.
- **Aid per capita** includes both ODA and official aid.
- **Aid dependency ratios** are calculated using values in U.S. dollars converted at official exchange rates. See *Definitions* for tables 1.1, 4.9, and 4.14 for definitions of GNP, gross domestic investment, imports of goods and services, and central government expenditures.

Data sources



Data on aid are compiled by DAC and published in its annual statistical report, *Geographical Distribution of Financial Flows to Aid Recipients*, and in the DAC chairman's report, *Development Co-operation*. The OECD also makes its data available on diskette, magnetic tape, and the Internet.

6.11 Distribution of net aid by Development Assistance Committee members

	Total	Ten major DAC donors										Others
$ millions, 1997		Japan	United States	France	Germany	Netherlands	United Kingdom	Canada	Sweden	Denmark	Norway	
Albania	100.0	10.8	6.0	2.2	26.5	7.7	1.4	0.4	1.0	1.5	1.3	41.2
Algeria	192.5	2.1	0.0	136.7	13.5	1.8	0.1	1.3	0.7	0.0	0.1	36.1
Angola	227.0	12.0	22.0	5.6	15.7	21.7	5.4	4.6	27.8	0.8	24.5	86.8
Argentina	56.9	22.8	0.0	6.6	10.8	0.7	0.2	1.4	0.6	0.1	0.0	13.7
Armenia	46.4	4.3	22.0	4.3	4.1	5.1	1.6	0.0	1.3	0.3	2.2	1.2
Australia												
Austria												
Azerbaijan	15.4	2.8	2.0	0.4	3.6	1.3	2.0	0.1	0.3	0.0	2.2	0.7
Bangladesh	539.0	130.0	30.0	16.1	47.3	63.7	70.3	52.4	33.0	39.0	32.4	24.8
Belarus	60.3	0.3	17.0	0.0	8.6	0.0	1.7	0.0	1.0	0.7	0.2	31.0
Belgium												
Benin	148.0	18.8	22.0	26.6	20.3	11.1	0.0	4.2	0.0	19.0	–0.1	26.2
Bolivia	452.5	65.0	163.0	13.9	47.5	59.8	8.6	12.4	20.1	14.7	3.8	43.7
Bosnia and Herzegovina	510.1	34.2	185.0	5.0	33.1	84.1	1.8	8.2	31.2	4.0	40.8	82.9
Botswana	55.8	9.8	9.0	0.7	7.2	4.5	6.5	0.6	8.5	0.8	7.3	1.1
Brazil	184.9	61.8	–8.0	18.4	51.7	18.0	9.0	3.7	2.6	–2.4	1.9	28.1
Bulgaria	112.4	14.3	5.0	0.0	22.7	1.1	5.2	0.0	0.1	1.5	0.0	62.5
Burkina Faso	217.9	8.2	14.0	56.3	31.4	36.6	1.0	6.0	1.4	25.9	3.2	33.8
Burundi	38.2	0.0	3.0	5.9	6.1	4.0	1.7	1.0	3.0	0.0	5.4	8.0
Cambodia	226.0	61.6	30.0	27.1	17.0	11.5	7.4	3.0	23.0	2.4	8.8	34.3
Cameroon	330.2	4.9	2.0	199.8	57.1	8.0	3.8	9.1	0.0	0.8	0.5	44.3
Canada												
Central African Republic	61.3	20.0	0.0	31.1	8.8	0.5	0.0	0.1	0.4	0.1	0.1	0.4
Chad	96.4	0.4	5.0	48.2	27.6	1.9	0.2	0.8	0.5	0.0	0.2	11.7
Chile	113.1	43.2	–3.0	17.4	33.8	8.5	2.4	1.3	3.0	0.1	1.2	5.4
China	1,228.6	576.9	0.0	50.1	381.9	7.7	46.2	35.4	6.8	13.7	15.0	94.8
Hong Kong, China	3.8	1.5	0.0	0.0	1.7	0.1	0.1	0.0	0.0	0.0	0.0	0.3
Colombia	171.2	35.7	23.0	14.0	32.0	8.9	4.1	–1.2	4.8	0.1	5.5	44.4
Congo, Dem. Rep.	104.5	5.8	0.0	12.9	15.8	7.3	5.0	3.8	6.7	0.1	7.9	39.2
Congo, Rep.	260.0	0.1	0.0	242.4	8.0	0.2	0.0	3.8	1.2	–0.3	0.8	3.7
Costa Rica	–2.4	–7.4	–32.0	3.6	–5.4	14.3	1.1	1.7	3.1	3.3	2.0	13.3
Côte d'Ivoire	232.7	33.4	10.0	133.7	21.1	5.5	1.6	4.3	0.2	1.0	0.2	21.9
Croatia	22.9	–0.9	3.0	2.6	–3.8	0.6	1.5	0.4	3.0	0.1	8.9	7.4
Cuba	31.9	0.9	0.0	5.3	1.7	0.1	3.6	4.1	1.1	0.0	1.1	14.1
Czech Republic	84.7	2.2	1.0	0.0	24.0	0.0	4.6	1.5	0.1	2.9	0.2	48.3
Denmark												
Dominican Republic	31.3	17.3	–18.0	4.4	6.7	2.6	0.0	0.9	0.1	0.1	0.4	16.7
Ecuador	139.8	25.6	13.0	9.6	16.0	14.5	13.1	3.0	3.2	0.1	1.6	40.2
Egypt, Arab Rep.	1,496.3	125.4	542.0	283.9	397.2	22.9	8.8	17.1	2.3	30.7	3.3	62.9
El Salvador	234.0	68.3	89.0	6.4	25.7	8.5	0.4	6.6	4.8	1.3	2.3	20.8
Eritrea	80.9	12.4	12.0	1.8	10.2	5.9	1.7	1.4	5.0	4.6	8.8	17.1
Estonia	54.6	0.2	0.0	0.0	3.2	0.0	1.0	0.3	7.2	6.8	1.8	34.1
Ethiopia	372.5	37.3	60.0	7.6	58.3	35.4	21.6	12.3	36.0	3.5	28.4	72.1
Finland												
France												
Gabon	30.2	0.4	2.0	20.7	1.0	0.1	0.0	3.9	0.0	0.0	0.0	2.2
Gambia, The	17.4	0.2	5.0	0.6	3.8	2.2	2.4	0.2	0.7	0.2	0.8	1.3
Georgia	69.7	4.4	32.0	2.0	15.4	5.3	2.9	0.0	0.6	0.0	1.6	5.5
Germany												
Ghana	291.9	70.2	44.0	12.5	42.4	17.3	38.1	14.1	3.8	39.0	1.1	9.4
Greece												
Guatemala	212.2	49.8	35.0	1.6	31.7	16.5	0.8	5.5	13.6	10.6	15.2	31.9
Guinea	125.5	4.4	22.0	48.6	15.9	0.2	0.7	9.8	0.2	2.0	1.0	20.6
Guinea-Bissau	58.5	7.5	11.0	6.0	1.3	8.0	0.1	0.2	5.5	1.1	0.0	17.9
Haiti	175.4	14.1	88.0	24.8	5.2	4.1	0.2	30.8	0.1	0.0	0.9	7.2
Honduras	155.0	42.0	28.0	1.2	24.1	14.3	1.9	4.9	1.8	1.4	2.0	33.4

Distribution of net aid by Development Assistance Committee members 6.11

$ millions, 1997	Total	Ten major DAC donors										Others
		Japan	United States	France	Germany	Netherlands	United Kingdom	Canada	Sweden	Denmark	Norway	
Hungary	141.0	24.2	1.0	0.0	34.1	0.0	6.3	1.9	0.0	–1.0	0.3	74.2
India	927.6	491.8	29.0	36.4	55.0	32.8	154.0	16.0	25.6	34.4	13.8	38.8
Indonesia	790.5	496.9	–51.0	12.6	115.2	–48.8	57.2	18.7	1.3	1.7	9.2	177.5
Iran, Islamic Rep.	165.2	70.3	0.0	11.1	56.6	7.8	0.6	0.1	3.7	0.0	2.2	12.7
Iraq	180.0	0.8	0.0	3.4	64.1	42.8	6.3	0.7	44.6	0.0	5.2	12.2
Ireland												
Israel	1,181.2	0.5	1,248.0	0.0	–70.4	2.0	0.0	0.2	0.0	0.0	0.0	0.8
Italy												
Jamaica	–5.0	15.5	–23.0	–0.3	–5.8	1.2	–4.8	3.4	3.2	0.0	0.3	5.4
Japan												
Jordan	288.1	139.6	65.0	11.3	34.8	8.2	12.2	2.5	0.9	1.1	0.6	12.1
Kazakhstan	93.7	43.1	37.0	1.5	6.9	0.4	3.8	0.2	0.1	0.0	0.0	0.8
Kenya	301.0	68.8	17.0	6.0	43.7	31.7	46.6	8.0	17.3	16.5	2.8	42.6
Korea, Dem. Rep.	35.1	0.0	0.0	0.0	4.8	1.1	0.9	2.5	3.4	0.0	9.0	13.5
Korea, Rep.	–158.3	–140.6	–44.0	9.5	14.3	0.2	0.0	0.0	0.0	0.0	0.0	2.3
Kuwait	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kyrgyz Republic	50.4	18.1	8.0	1.2	8.7	0.7	1.3	0.0	0.0	2.6	0.6	9.3
Lao PDR	164.8	78.6	2.0	14.8	16.6	4.2	1.1	1.2	15.5	0.8	5.4	24.7
Latvia	80.2	0.1	2.0	0.0	7.6	0.0	1.1	0.4	15.5	5.7	1.7	46.2
Lebanon	69.2	0.8	–1.0	39.7	9.6	0.6	0.5	2.3	3.8	0.0	6.1	6.8
Lesotho	44.6	5.7	2.0	2.0	5.8	0.4	7.4	0.2	6.5	1.1	4.0	9.5
Libya	1.8	0.0	0.0	0.4	1.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3
Lithuania	98.3	0.3	1.0	0.0	8.2	0.0	1.3	0.7	21.1	11.2	2.8	51.7
Macedonia, FYR	30.2	10.0	0.0	2.4	3.1	7.5	1.0	0.0	1.0	0.3	0.0	4.9
Madagascar	549.0	29.5	33.0	311.0	47.5	2.9	1.2	0.3	0.0	0.8	6.2	116.8
Malawi	174.0	35.1	27.0	1.7	32.8	12.4	28.4	5.6	5.3	17.7	4.6	3.4
Malaysia	–243.7	–258.9	0.0	0.9	6.4	2.0	–5.2	2.2	0.1	9.9	0.1	–1.2
Mali	256.6	26.1	38.0	63.2	55.7	33.5	1.5	9.3	0.8	3.5	8.0	17.1
Mauritania	95.5	35.5	2.0	30.7	16.8	1.0	0.4	0.6	0.2	0.9	0.6	6.9
Mauritius	2.7	3.5	–1.0	10.6	–15.3	0.1	1.4	0.1	0.0	0.0	0.0	3.3
Mexico	88.7	41.4	8.0	10.3	12.5	3.9	5.5	2.4	0.3	1.4	0.2	2.8
Moldova	14.3	0.1	8.0	0.0	2.7	2.2	1.0	0.0	0.1	0.0	0.0	0.2
Mongolia	118.1	78.0	12.0	0.6	14.0	1.8	0.7	0.2	0.8	6.6	0.5	2.9
Morocco	215.2	23.7	–27.0	154.1	15.0	0.7	0.6	4.6	0.3	–0.6	0.1	43.7
Mozambique	621.6	38.1	71.0	45.0	40.5	42.7	72.5	9.1	52.1	30.1	54.7	165.9
Myanmar	23.6	14.8	0.0	1.9	1.4	1.2	0.5	0.1	0.1	0.3	1.6	1.6
Namibia	122.9	4.9	17.0	6.6	26.6	8.1	7.3	0.3	14.9	6.3	11.8	19.1
Nepal	233.5	86.1	21.0	3.5	24.6	10.9	28.6	4.7	1.2	18.0	7.7	27.3
Netherlands												
New Zealand												
Nicaragua	258.3	49.0	41.0	1.2	29.0	23.6	1.2	5.0	21.5	25.8	19.4	41.7
Niger	181.2	13.6	16.0	94.6	17.4	6.4	1.3	2.6	0.3	2.9	1.9	24.2
Nigeria	52.2	0.6	12.0	4.0	14.1	1.1	14.2	1.0	0.6	–0.3	0.7	4.3
Norway												
Oman	20.3	7.3	12.0	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Pakistan	73.1	92.2	–76.0	–5.1	–26.6	17.2	42.5	12.5	1.8	–2.7	6.4	10.8
Panama	42.7	42.6	–13.0	0.3	3.8	0.4	0.8	1.0	0.0	0.2	0.0	6.5
Papua New Guinea	291.9	49.2	1.0	0.4	4.5	1.5	0.0	0.1	0.0	0.0	0.0	235.2
Paraguay	70.1	31.4	2.0	0.2	20.1	0.8	–0.1	0.2	2.5	0.0	0.6	12.4
Peru	364.2	38.4	119.0	17.4	85.1	29.8	7.1	17.3	4.6	2.2	2.4	40.8
Philippines	567.3	319.0	15.0	12.2	56.6	22.4	18.5	16.5	16.7	3.9	2.6	84.0
Poland	673.6	4.8	26.0	0.0	72.3	0.0	23.5	121.4	7.9	12.8	3.0	402.0
Portugal												
Puerto Rico												
Romania	109.6	5.9	0.0	0.0	24.8	3.1	10.2	1.4	0.0	2.5	0.3	61.5
Russian Federation	1,033.2	5.6	273.0	0.0	90.5	0.4	56.2	14.1	14.3	17.5	29.8	531.9

6.11 Distribution of net aid by Development Assistance Committee members

	Total	Ten major DAC donors										Others
$ millions, 1997		**Japan**	**United States**	**France**	**Germany**	**Netherlands**	**United Kingdom**	**Canada**	**Sweden**	**Denmark**	**Norway**	
Rwanda	178.7	8.1	9.0	10.7	26.0	29.2	10.0	21.4	1.9	1.8	11.1	49.4
Saudi Arabia	–2.4	–4.8	0.0	1.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Senegal	292.0	25.4	30.0	142.2	34.2	12.0	1.0	15.5	1.8	–1.4	1.3	30.1
Sierra Leone	41.4	1.2	13.0	2.9	2.9	1.4	8.0	5.2	0.8	0.1	3.9	2.1
Singapore	–0.4	3.1	0.0	0.0	–4.4	0.2	0.3	0.4	0.0	0.0	0.0	0.1
Slovak Republic	51.0	1.7	4.0	0.0	10.8	0.1	5.5	0.6	0.1	0.9	0.2	27.2
Slovenia	–9.7	1.0	0.0	0.7	–15.5	0.2	1.3	0.0	0.0	0.1	0.0	2.6
South Africa	415.0	28.9	104.0	34.0	29.6	35.9	38.8	10.9	41.1	35.7	19.8	36.4
Spain												
Sri Lanka	228.3	134.6	5.0	1.6	9.8	14.0	17.4	3.6	13.9	1.5	15.9	11.1
Sudan	85.7	0.5	17.0	3.0	9.2	20.5	9.9	2.5	4.1	0.9	7.6	10.8
Sweden												
Switzerland												
Syrian Arab Republic	93.0	66.3	0.0	11.1	12.0	1.2	0.1	0.2	1.4	0.0	0.5	0.1
Tajikistan	35.9	0.3	13.0	0.1	5.1	5.5	3.2	0.0	1.3	0.0	0.9	6.5
Tanzania	569.1	55.4	13.0	79.6	59.3	52.4	67.6	7.8	48.2	64.0	50.9	70.9
Thailand	600.8	468.3	8.0	8.2	35.3	6.1	3.0	9.9	5.4	28.9	0.5	27.3
Togo	75.7	27.5	2.0	32.6	8.7	0.4	0.5	0.4	0.1	0.0	0.0	3.5
Trinidad and Tobago	–0.5	2.0	0.0	0.5	–4.3	0.2	0.7	0.3	0.0	0.0	0.0	0.1
Tunisia	69.3	11.5	–19.0	60.3	9.9	3.4	0.3	1.1	0.5	0.0	0.1	1.3
Turkey	–59.3	–21.7	–86.0	22.4	24.3	–0.6	1.7	–1.2	2.2	–0.2	0.7	–0.8
Turkmenistan	2.2	0.8	0.0	0.2	0.5	0.0	0.6	0.0	0.0	0.0	0.0	0.1
Uganda	438.8	26.9	36.0	5.2	38.6	33.4	78.2	3.2	31.3	58.4	27.8	100.0
Ukraine	309.6	0.5	72.0	0.0	35.6	0.1	18.8	12.6	6.9	3.2	0.1	159.9
United Arab Emirates	0.5	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United Kingdom												
United States												
Uruguay	29.5	11.6	1.0	3.1	8.4	0.8	0.5	1.6	0.9	0.0	0.0	1.5
Uzbekistan	110.9	83.2	2.0	1.6	21.4	0.2	1.0	0.0	0.1	0.0	0.0	1.4
Venezuela	–1.8	5.9	0.0	3.7	5.0	0.2	0.3	0.9	0.1	0.0	0.1	–17.9
Vietnam	585.5	232.5	48.0	63.9	40.1	19.1	8.4	15.8	35.7	34.3	6.5	81.3
West Bank and Gaza	320.6	45.5	70.0	12.8	35.1	25.3	10.2	5.8	20.8	5.1	41.0	49.2
Yemen, Rep.	174.5	36.9	4.0	12.8	37.9	52.4	12.4	3.8	0.6	0.0	0.2	13.5
Yugoslavia, FR (Serb./Mont.)	77.0	0.1	0.0	3.1	28.4	4.3	0.8	0.2	22.7	0.1	5.4	12.1
Zambia	367.0	43.5	48.0	3.1	16.9	24.3	93.7	11.7	21.3	24.0	37.2	43.2
Zimbabwe	222.5	38.7	19.0	–0.8	38.4	24.1	22.2	4.3	22.9	19.8	15.9	18.0
World	**36,146 s**	**6,621 s**	**7,451 s**	**4,776 s**	**3,950 s**	**2,141 s**	**2,120 s**	**1,371 s**	**1,329 s**	**1,135 s**	**973 s**	**4,279 s**
Low income	12,021	2,228	1,194	1,914	1,240	922	906	361	533	522	497	1,703
Middle income	12,333	3,233	1,673	1,236	2,160	458	605	374	381	244	252	1,716
Lower middle income	10,782	3,228	1,578	931	1,836	382	496	217	300	177	201	1,437
Upper middle income	1,552	5	95	305	324	76	109	157	82	68	52	279
Low & middle income	34,295	6,753	6,249	4,066	4,024	2,005	2,119	1,371	1,329	1,135	973	4,271
East Asia & Pacific	5,010	2,250	224	211	724	47	159	126	119	111	71	968
Europe & Central Asia	3,994	276	1,599	50	571	149	218	179	208	134	128	483
Latin America & Carib.	3,794	715	916	174	473	318	301	149	117	67	71	493
Middle East & N. Africa	9,901	1,746	2,084	1,408	1,172	681	491	558	378	331	204	850
South Asia	2,221	964	38	54	131	187	323	103	88	103	87	144
Sub-Saharan Africa	9,375	803	1,388	2,169	955	624	628	255	419	390	413	1,333
High income	1,850	–132	1,202	710	–75	135	1	1	0	0	0	8
Europe EMU												

Note: Regional aggregates include data for economies not specified elsewhere. World and income group totals include aid not allocated by country or region.

Distribution of net aid by Development Assistance Committee members 6.11

About the data

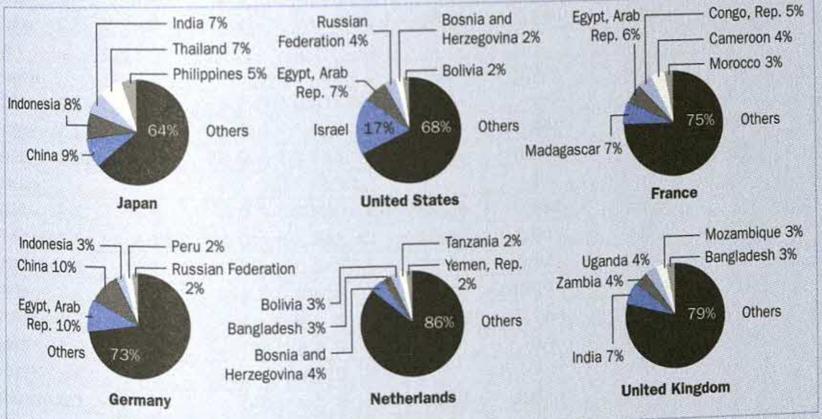
The data in the table show net bilateral aid to low- and middle-income economies from members of the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD). The DAC compilation includes aid to some countries and territories not shown in the table and small quantities to unspecified economies that are recorded only at the regional or global level. Aid to countries and territories not shown in the table has been assigned to regional totals based on the World Bank's regional classification system. Aid to unspecified economies has been included in regional totals, but not in totals for income groups. Aid not allocated by country or region—including administrative costs, research into development issues, and aid to nongovernmental organizations—is included in the world total; thus regional and income group totals do not sum to the world total.

Because these data are based on donor country reports of bilateral programs, they cannot be reconciled with recipient country reports. Nor do they reflect the full extent of aid flows from the reporting donor countries or to recipient countries. A full accounting would include donor country contributions to multilateral institutions and the flow of resources from multilateral institutions to recipient countries as well as flows from countries that are not members of DAC. In addition, the expenditures countries report as official development assistance (ODA) have changed. For example, some DAC members providing aid to refugees within their own borders have reported these expenditures as ODA.

Some of the aid recipients shown in the table are themselves significant donors. See table 6.8a for a summary of ODA from non-DAC countries.

Figure 6.11

Poor economies were not the sole recipients of aid from the top donors in 1997



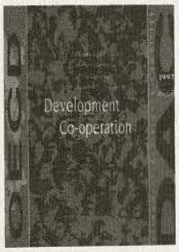
Source: OECD.

These figures show the distribution of aid from the top six donors to their top five recipients in 1997. Among the top recipients, many are middle-income economies, and Israel, a high-income country, receives substantial aid from the United States.

Definitions

- **Net aid** comprises net bilateral ODA to part I recipients and net bilateral official aid to part II recipients (see *About the data* for table 6.8). • **Other DAC donors** are Australia, Austria, Belgium, Denmark, Finland, Ireland, Luxembourg, New Zealand, Portugal, Spain, and Switzerland.

Data sources



Data on aid are compiled by DAC and published in its annual statistical report, *Geographical Distribution of Financial Flows to Aid Recipients*, and in the DAC chairman's report, *Development Co-operation*. The OECD also makes its data available on diskette, magnetic tape, and the Internet.

6.12 Net financial flows from multilateral institutions

	International financial institutions							United Nations					Total
	World Bank		IMF		Regional development banks		Others						
$ millions, 1997	IDA	IBRD	Concessional	Non-concessional	Concessional	Non-concessional		WFP	UNDP	UNFPA	UNICEF	Others	
Albania	18.9	0.0	0.0	4.2	..	0.0	2.2	3.5	0.8	0.2	2.4	0.8	33.0
Algeria	0.0	16.5	..	114.2	..	267.6	–171.5	1.0	1.2	0.7	2.0	4.8	236.5
Angola	27.9	0.0	..	..	0.0	0.0	–0.6	59.7	15.5	2.1	14.9	17.4	136.9
Argentina	0.0	497.8	..	–36.8	–1.9	604.5	0.0	..	124.8	0.1	3.9	6.6	1,198.9
Armenia	76.5	0.9	23.2	0.0	..	–0.2	–0.8	2.9	2.3	0.5	1.6	2.3	109.2
Australia	..	..	..	..	..	..	..	..	..	..	..	..	..
Austria	..	..	..	..	..	..	..	..	..	..	..	..	..
Azerbaijan	55.4	0.0	76.5	28.2	..	26.7	–57.6	3.5	4.5	0.7	2.8	0.3	140.9
Bangladesh	245.0	–4.5	–113.6	0.0	140.4	6.9	8.2	60.5	11.7	6.8	23.3	8.6	393.2
Belarus	0.0	13.3	..	0.0	..	43.1	0.0	..	0.8	0.0	0.6	1.1	58.9
Belgium	..	..	..	..	..	..	..	..	..	..	..	..	..
Benin	15.9	0.0	1.9	..	5.9	0.0	2.3	4.4	6.7	2.9	3.0	3.0	45.9
Bolivia	132.2	–19.4	–11.2	0.0	69.3	–15.6	38.3	10.9	7.8	2.2	9.7	3.1	227.4
Bosnia and Herzegovina	65.2	..	..	–1.0	..	..	..	..	11.7	0.2	7.5	1.0	84.7
Botswana	–0.5	–16.5	..	..	1.6	–9.3	–1.6	..	3.5	0.9	0.9	1.5	–19.6
Brazil	0.0	367.5	..	–32.6	0.0	1,015.8	0.0	..	200.6	2.2	20.1	22.5	1,596.1
Bulgaria	0.0	85.0	..	400.1	..	19.3	–117.7	..	1.4	0.3	0.1	1.4	389.9
Burkina Faso	30.4	0.0	16.5	..	12.9	–1.5	–2.0	5.6	7.0	2.1	4.5	2.4	77.9
Burundi	7.4	0.0	–8.0	0.0	1.3	–3.8	–1.1	..	7.3	1.4	8.5	59.4	72.5
Cambodia	30.4	0.0	0.0	0.0	10.0	..	..	14.2	37.9	3.9	11.5	4.2	112.1
Cameroon	114.5	–70.4	37.2	–11.3	1.6	–14.2	–48.0	0.8	0.9	1.9	2.1	2.2	17.2
Canada	..	..	..	..	..	..	..	..	..	..	..	..	..
Central African Republic	3.3	0.0	–3.8	–3.7	0.0	0.0	1.1	..	..	..	..	..	–3.1
Chad	46.6	0.0	5.5	–5.3	21.1	..	–3.4	6.2	4.6	1.4	3.7	1.7	82.0
Chile	–0.7	–24.7	..	0.0	–0.9	–342.9	0.8	..	10.7	0.1	0.7	2.1	–354.9
China	687.1	1,210.8	0.0	0.0	..	495.6	–8.5	38.1	43.1	0.1	20.5	10.1	2,496.9
Hong Kong, China	..	..	..	..	..	..	..	..	..	..	..	..	..
Colombia	–0.7	–248.1	..	..	–11.5	–148.9	60.6	0.1	80.8	0.8	2.6	3.3	–261.1
Congo, Dem. Rep.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	..	15.3	0.1	21.4	7.3	44.1
Congo, Rep.	0.6	–2.8	0.0	–2.2	0.0	–13.9	0.0	..	0.2	0.3	1.4	1.6	–14.9
Costa Rica	–0.2	–34.2	..	–0.7	–10.2	77.6	62.1	..	6.5	0.3	1.0	2.3	104.5
Côte d'Ivoire	140.1	–157.6	0.0	–22.1	6.6	–17.7	–54.0	3.1	2.6	1.9	2.6	12.6	–81.9
Croatia	0.0	100.4	..	37.5	..	..	4.7	..	1.5	..	2.5	0.3	146.7
Cuba	..	..	..	..	..	..	..	7.3	2.0	0.9	1.8	3.0	15.0
Czech Republic	0.0	–16.7	..	0.0	..	0.0	–59.4	..	0.4	..	..	1.3	–74.5
Denmark	..	..	..	..	..	..	..	..	..	..	..	..	..
Dominican Republic	–0.7	–15.2	..	–62.4	6.9	2.4	0.5	1.8	5.2	1.5	1.4	2.0	–56.6
Ecuador	–1.1	–55.6	..	–2.7	–2.9	51.5	75.1	1.8	17.4	1.6	3.9	1.9	90.9
Egypt, Arab Rep.	141.4	–122.8	0.0	–15.0	15.3	–16.2	82.1	6.2	14.9	3.1	5.6	7.9	122.7
El Salvador	–0.8	11.8	0.0	0.0	10.7	93.1	51.5	1.5	23.9	1.0	1.4	1.1	195.1
Eritrea	3.8	0.0	..	..	..	..	10.4	..	7.7	1.1	6.3	2.1	31.4
Estonia	0.0	10.9	..	–19.5	..	–3.4	3.4	..	1.1	..	..	0.4	–7.0
Ethiopia	49.7	0.0	0.0	0.0	20.8	37.3	–4.4	83.5	27.4	5.8	14.8	18.5	253.4
Finland	..	..	..	..	..	..	..	..	..	..	..	..	..
France	..	..	..	..	..	..	..	..	..	..	..	..	..
Gabon	0.0	–7.1	..	19.2	0.1	4.3	–5.3	..	1.1	0.4	0.6	1.3	14.7
Gambia, The	7.8	0.0	–6.4	0.0	10.3	–1.5	–0.1	2.1	4.2	0.7	1.7	1.9	20.7
Georgia	64.3	0.0	76.4	0.0	..	5.0	0.0	4.8	3.8	0.9	2.1	2.1	159.3
Germany	..	..	..	..	..	..	..	..	..	..	..	..	..
Ghana	225.2	–10.9	–118.2	–47.4	32.1	–12.7	5.6	1.1	6.7	1.9	6.2	3.5	93.0
Greece	..	..	..	..	..	..	..	..	..	..	..	..	..
Guatemala	0.0	4.3	..	0.0	4.6	17.0	1.4	6.8	33.2	0.6	3.2	8.4	79.6
Guinea	105.1	0.0	22.1	0.0	17.9	4.7	34.7	..	4.8	1.0	3.2	27.9	221.4
Guinea-Bissau	16.4	0.0	5.1	0.0	11.6	–0.4	–0.7	2.0	2.9	0.6	2.5	1.6	41.5
Haiti	35.1	0.0	19.9	0.0	42.3	..	–0.8	4.7	23.3	1.7	4.0	1.3	131.6
Honduras	93.1	–49.7	0.0	–8.8	19.6	7.0	262.2	4.0	11.4	1.5	2.6	0.8	343.7

Net financial flows from multilateral institutions 6.12

	International financial institutions							United Nations					Total
	World Bank		IMF		Regional development banks		Others						
$ millions, 1997	IDA	IBRD	Concessional	Non-concessional	Concessional	Non-concessional		WFP	UNDP	UNFPA	UNICEF	Others	
Hungary	0.0	–32.8	..	0.0	..	–29.9	–38.2	..	0.3	..	..	2.0	–98.7
India	579.9	–278.1	0.0	–613.0	..	480.3	29.2	23.8	23.8	8.8	52.9	13.2	320.8
Indonesia	–20.4	–245.2	..	3,029.4	18.9	173.6	–7.7	..	11.4	2.3	14.6	9.2	2,986.1
Iran, Islamic Rep.	0.0	49.0	..	..	..	..	–40.3	3.7	1.9	1.8	1.7	15.0	32.9
Iraq	..	..	..	..	..	..	..	37.6	12.8	0.1	17.9	7.0	75.5
Ireland	..	..	..	..	..	..	..	..	..	..	..	..	..
Israel	..	..	..	..	..	..	..	..	..	..	..	..	..
Italy	..	..	..	..	..	..	..	..	..	..	..	..	..
Jamaica	0.0	–45.7	..	–34.6	–4.6	19.9	–19.8	1.5	1.9	0.3	1.0	1.3	–78.9
Japan	..	..	..	..	..	..	..	..	..	..	..	..	..
Jordan	–2.3	25.0	..	110.7	..	..	137.2	4.8	2.7	1.1	1.3	79.8	360.4
Kazakhstan	0.0	201.7	..	–6.4	16.9	54.6	10.3	..	2.2	0.3	1.6	1.4	282.6
Kenya	72.3	–73.8	–67.3	0.0	42.0	–6.4	–12.5	31.0	6.8	2.0	5.8	21.6	21.4
Korea, Dem. Rep.	..	..	..	..	..	..	..	104.7	5.9	2.3	6.9	3.2	123.0
Korea, Rep.	–3.5	2,797.9	..	11,283.9	..	1,938.5	0.0	..	1.8	..	..	1.8	16,020.4
Kuwait	..	..	..	..	..	..	..	..	..	..	..	..	..
Kyrgyz Republic	66.5	0.0	44.4	–9.8	51.9	15.6	0.4	..	4.1	1.1	1.3	0.7	176.1
Lao PDR	40.9	0.0	3.2	..	84.6	..	5.8	12.0	11.6	0.4	3.3	1.3	163.1
Latvia	0.0	52.8	..	–36.7	..	–15.9	13.3	..	2.0	0.1	..	0.2	15.8
Lebanon	0.0	31.5	..	..	..	..	31.4	..	5.7	0.3	2.9	45.1	116.8
Lesotho	10.0	6.0	–4.3	..	4.8	–2.1	5.4	3.4	5.6	0.7	1.2	1.3	32.1
Libya	..	..	..	..	..	..	..	..	2.4	0.0	..	4.8	7.3
Lithuania	0.0	18.1	..	14.2	..	4.4	17.6	..	1.0	0.0	..	0.5	55.8
Macedonia, FYR	29.2	13.0	25.0	–0.4	..	19.6	18.0	47.1	0.1	..	5.1	1.7	158.5
Madagascar	119.7	–3.6	0.9	0.0	71.5	–22.0	–20.2	2.8	6.1	1.7	4.7	3.3	164.8
Malawi	98.1	–6.0	–6.4	0.0	29.2	–1.4	–3.5	0.9	12.5	2.8	6.7	3.6	136.5
Malaysia	0.0	–75.1	..	0.0	0.0	24.2	–2.4	..	5.2	0.2	0.6	2.4	–44.9
Mali	67.5	0.0	21.5	0.0	12.1	–0.3	8.3	7.4	19.0	2.3	6.7	11.7	156.1
Mauritania	31.8	–1.9	12.1	0.0	13.5	–6.2	3.1	10.1	7.8	1.0	2.0	3.7	77.1
Mauritius	–0.6	–3.5	0.0	0.0	–0.3	–2.7	19.0	0.0	0.9	0.3	0.6	1.0	14.7
Mexico	0.0	–316.1	..	–3,439.2	–4.7	240.9	0.0	..	8.8	1.8	4.3	10.4	–3,493.7
Moldova	35.0	5.4	..	0.6	..	13.5	0.0	..	2.8	0.2	0.6	0.7	58.8
Mongolia	33.8	0.0	7.7	–0.9	67.4	..	0.0	..	5.2	0.8	1.0	2.2	117.4
Morocco	–1.4	–152.6	0.0	–3.2	5.5	–150.4	215.9	4.3	5.9	1.7	1.9	4.0	–68.4
Mozambique	146.6	0.0	19.6	..	55.5	–6.3	31.8	5.0	25.9	3.0	10.3	2.8	294.2
Myanmar	–7.0	0.0	0.0	0.0	–8.2	–0.8	–2.6	1.6	14.0	0.9	8.4	12.7	19.0
Namibia	..	..	..	..	..	..	..	..	1.0	1.4	2.7	3.2	8.3
Nepal	45.2	0.0	–7.1	0.0	84.7	0.0	0.6	10.3	11.9	2.0	8.4	10.2	166.2
Netherlands	..	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	..	..	..	..	..	..	..	..	..	..	..	..	..
Nicaragua	49.4	–16.7	0.0	0.0	51.3	2.4	–44.9	6.9	8.3	2.7	3.4	1.0	63.9
Niger	44.9	0.0	17.3	–5.7	18.0	–0.4	–2.6	8.2	6.0	2.2	4.5	6.8	99.2
Nigeria	81.6	–160.7	..	..	13.9	–86.5	–0.7	..	33.0	2.9	13.2	4.8	–98.6
Norway	..	..	..	..	..	..	..	..	..	..	..	..	..
Oman	0.0	–4.2	..	..	..	..	–8.2	..	0.0	0.1	0.8	1.2	–10.3
Pakistan	190.7	284.0	35.9	–64.5	217.3	–10.7	–61.9	16.4	10.7	4.6	12.5	15.2	650.1
Panama	0.0	24.7	..	19.8	–8.8	115.3	–0.3	0.8	81.4	0.3	0.8	1.9	235.9
Papua New Guinea	–2.2	19.7	0.0	0.0	7.8	3.8	–4.5	..	3.6	1.9	0.7	2.4	33.0
Paraguay	–1.5	15.3	..	..	26.6	51.3	14.3	0.5	14.1	1.0	1.2	1.1	123.8
Peru	0.0	425.0	..	147.2	–6.6	437.8	0.0	3.2	96.0	3.1	6.8	3.3	1,115.7
Philippines	7.6	–112.1	0.0	484.2	47.9	91.0	0.0	..	7.8	6.1	8.8	4.4	545.8
Poland	0.0	83.6	..	0.0	..	..	0.0	..	1.6	0.2	..	1.8	87.2
Portugal	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..	..
Romania	0.0	371.0	..	30.5	..	275.6	43.6	..	1.8	0.5	1.6	1.8	726.4
Russian Federation	0.0	2,690.6	..	1,524.4	..	38.1	–41.1	1.2	1.7	0.3	0.1	9.5	4,224.7

6.12 Net financial flows from multilateral institutions

$ millions, 1997	International financial institutions							United Nations					Total
	World Bank		IMF		Regional development banks		Others						
	IDA	IBRD	Concessional	Non-concessional	Concessional	Non-concessional		WFP	UNDP	UNFPA	UNICEF	Others	
Rwanda	47.5	0.0	–2.4	20.5	7.9	0.0	3.4	145.0	29.1	1.5	18.3	115.6	386.3
Saudi Arabia	..	..	..	..	..	..	..	..	5.3	..	..	11.8	17.1
Senegal	52.3	–7.2	2.2	–16.0	14.3	–9.6	5.1	2.4	4.3	3.1	3.9	4.5	59.3
Sierra Leone	26.4	–0.2	7.0	0.0	9.7	0.0	3.7	11.1	3.9	0.3	3.3	5.7	70.7
Singapore	..	..	..	..	..	..	..	..	..	..	..	..	..
Slovak Republic	0.0	–2.2	..	–51.7	..	–8.3	83.8	..	0.5	..	..	1.5	23.6
Slovenia	0.0	–2.3	..	..	..	..	..	..	0.2	..	..	2.3	0.2
South Africa	0.0	0.0	..	–422.8	..	..	..	..	5.3	1.3	2.3	5.1	–408.9
Spain	..	..	..	..	..	..	..	..	..	..	..	..	..
Sri Lanka	67.8	–5.9	–66.1	0.0	79.0	0.0	–1.1	3.9	8.1	0.9	5.1	9.9	101.6
Sudan	0.0	0.0	–7.1	–35.0	–0.2	4.7	0.0	32.4	11.1	1.8	29.0	11.8	48.3
Sweden	..	..	..	..	..	..	..	..	..	..	..	..	..
Switzerland	..	..	..	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	–10.0	–262.4	..	..	..	..	13.7	10.5	3.5	2.2	1.1	25.3	–216.1
Tajikistan	22.0	0.0	..	10.3	..	..	..	12.9	3.8	0.8	2.4	1.5	53.7
Tanzania	167.5	–20.1	53.6	0.0	45.9	–0.8	–10.8	12.0	14.9	4.2	12.4	5.6	284.4
Thailand	–1.8	251.0	0.0	2,477.0	–1.6	532.6	17.7	0.9	6.7	1.5	4.4	8.6	3,296.9
Togo	12.9	0.0	3.3	0.0	17.0	–0.1	–10.3	..	4.1	0.7	1.7	3.0	32.3
Trinidad and Tobago	0.0	3.6	..	–18.3	–0.1	26.8	12.6	..	0.3	..	..	0.6	25.5
Tunisia	–2.1	–45.8	..	–50.4	..	49.8	12.0	2.8	1.6	0.7	1.0	2.2	–28.2
Turkey	–5.9	–426.4	..	–27.6	..	..	–79.7	..	2.2	0.7	2.3	6.3	–528.1
Turkmenistan	0.0	3.2	..	..	..	8.0	4.9	..	1.4	0.8	1.1	0.3	19.5
Uganda	207.3	0.0	2.3	0.0	33.0	0.4	3.7	31.3	19.0	3.0	18.7	25.8	344.6
Ukraine	0.0	305.5	..	285.2	..	32.6	113.5	..	2.8	0.2	0.8	3.4	744.0
United Arab Emirates	..	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	..	..	..	..	..	..	..	..	..	..	..	..	..
United States	..	..	..	..	..	..	..	..	..	..	..	..	..
Uruguay	0.0	–17.5	..	–8.2	–1.7	133.4	2.6	..	24.5	0.3	0.8	0.9	135.1
Uzbekistan	0.0	12.9	..	0.0	..	8.5	–66.9	..	3.4	0.4	2.5	0.5	–38.8
Venezuela	0.0	–81.3	..	–452.1	–1.3	–12.9	0.0	..	19.0	0.5	1.6	3.3	–523.4
Vietnam	180.2	0.0	0.0	–54.0	143.6	0.0	15.9	13.9	15.8	4.8	9.7	3.7	333.6
West Bank and Gaza	..	..	..	..	..	..	..	1.9	28.0	1.8	3.0	125.6	160.3
Yemen, Rep.	79.0	0.0	60.5	79.0	..	..	6.6	10.3	10.7	2.2	3.4	8.8	260.5
Yugoslavia, FR (Serb./Mont.)	0.0	0.0	..	0.0	..	..	0.0	..	..	..	..	..	..
Zambia	165.6	–34.5	13.8	0.0	8.5	–15.7	18.2	2.0	11.5	2.6	7.2	6.3	185.4
Zimbabwe	82.7	3.1	0.0	–25.5	3.1	–2.9	61.4	..	0.0	..	..	0.8	122.7
World	5,219 s	6,724 s	197 s	14,456 s	1,753 s	6,629 s	691 s	1,073 s	1,642 s	182 s	659 s	1,392 s	40,618 s
Low income	4,172	–596	168	–784	1,455	402	194	757	622	110	447	535	7,482
Middle income	1,116	4,525	29	3,956	298	4,289	497	316	992	61	200	582	16,860
Lower middle income	1,122	4,455	29	8,417	308	2,637	522	316	564	52	155	445	19,021
Upper middle income	–6	70	0	–4,461	–10	1,652	–25	0	428	9	45	137	–2,160
Low & middle income	5,223	3,929	197	3,172	1,753	4,691	691	1,073	1,629	178	653	1,364	24,553
East Asia & Pacific	952	1,050	11	5,936	372	1,319	8	185	172	27	93	84	10,209
Europe & Central Asia	427	3,490	246	2,182	69	540	–142	76	62	11	39	249	7,248
Latin America & Carib.	325	431	17	–3,948	204	2,378	528	53	817	27	82	114	1,027
Middle East & N. Africa	205	–466	61	235	21	151	279	83	98	17	43	357	1,084
South Asia	1,133	–5	–151	–677	531	477	–21	167	94	25	115	84	1,772
Sub-Saharan Africa	2,246	–572	15	–556	557	–173	38	509	386	71	282	459	3,262
High income	–4	2,796	..	11,284	..	1,939	0	0	3	0	0	4	16,022
Europe EMU													

Note: The aggregates for the regional development banks, United Nations, and total net financial flows include amounts for economies not specified elsewhere.

Net financial flows from multilateral institutions

6.12

About the data

This table shows concessional and nonconcessional financial flows from the major multilateral institutions—the World Bank, the International Monetary Fund (IMF), regional development banks, United Nations agencies, and regional groups such as the Commission of the European Communities. Much of these data come from the World Bank's Debtor Reporting System.

The multilateral development banks fund their nonconcessional lending operations primarily by selling low-interest, highly rated bonds (the World Bank, for example, has a AAA rating) backed by prudent lending and financial policies and the strong financial backing of their members. These funds are then on-lent at slightly higher interest rates, and with relatively long maturities (15–20 years), to developing countries. Lending terms vary with market conditions and the policies of the banks.

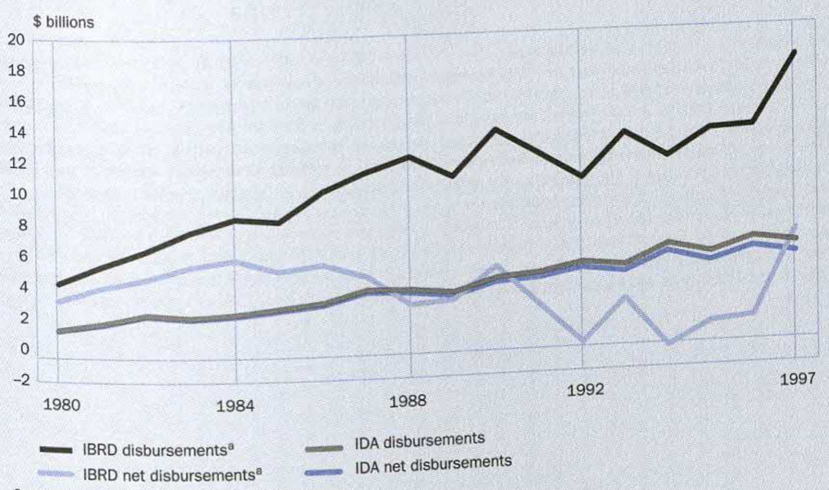
Concessional, or soft, lending by the World Bank Group is carried out through the International Development Association (IDA), although some loans by the International Bank for Reconstruction and Development (IBRD) are made on terms that may qualify as concessional under the Development Assistance Committee (DAC) definition. Eligibility to receive IDA resources is based on GNP per capita; countries must also meet performance standards assessed by World Bank staff. Since 1 July 1998 the GNP per capita cutoff has been set at $925, measured in 1997 using the Atlas method (see *Users guide*). In exceptional circumstances IDA extends eligibility temporarily to countries that are above the cutoff and are undertaking major adjustment efforts but are not creditworthy for IBRD lending. An exception has also been made for small island economies.

The IMF makes concessional funds available through its Enhanced Structural Adjustment Facility (ESAF), the successor to the Structural Adjustment Facility, and through the IMF Trust Fund. Low-income countries that face protracted balance of payments problems are eligible for ESAF funds.

Regional development banks also maintain concessional windows for funds. According to the DAC definition, concessional flows contain a grant element of at least 25 percent. (The grant element of loans is evaluated assuming a nominal, market interest rate of 10 percent. The grant element of a loan carrying a 10 percent interest rate is nil, and for a grant, which requires no repayment, it is 100 percent.) In the *World Development Indicators* loans from the major regional development banks—the African Development Bank, Asian Development Bank, and Inter-American Development Bank—are recorded according to each institution's classification. In some cases nonconcessional loans by these institutions may be on terms that meet DAC's definition of concessional.

Figure 6.12

Nonconcessional lending by the World Bank increased sharply in 1997



Source: World Bank, Debtor Reporting System.

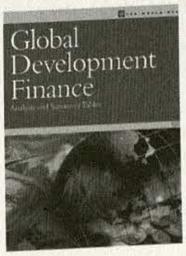
a. Includes Korea, Rep.

Lending to countries affected by the financial crisis accounted for a large share of the increase in the World Bank's nonconcessional disbursements.

Definitions

- **Net financial flows** are disbursements of loans and credits less repayments of principal. • **IDA** is the International Development Association, the soft loan window of the World Bank Group. • **IBRD** is the International Bank for Reconstruction and Development, the founding and largest member of the World Bank Group. • **IMF** is the International Monetary Fund. Nonconcessional lending is the credit provided by the IMF to its members, principally to meet their balance of payments needs. Concessional assistance is provided through the Enhanced Structural Adjustment Facility. • **Regional development banks** include the African Development Bank, based in Abidjan, Côte d'Ivoire, which lends to all of Africa, including North Africa; the Asian Development Bank, based in Manila, Philippines, which serves countries in South Asia and East Asia and the Pacific; and the Inter-American Development Bank, based in Washington, D.C., which is the principal development bank of the Americas. • **Others** is a residual category in the World Bank's Debtor Reporting System. It includes such institutions as the Caribbean Development Bank, European Investment Bank, and European Development Fund. • **United Nations** includes the World Food Programme (WFP), United Nations Development Programme (UNDP), United Nations Population Fund (UNFPA), United Nations Children's Fund (UNICEF), and other United Nations agencies such as the United Nations High Commissioner for Refugees, United Nations Relief and Works Agency for Palestine Refugees in the Near East, and United Nations Regular Program for Technical Assistance. • **Concessional financial flows** cover disbursements made through concessional lending facilities. • **Nonconcessional financial flows** cover all other disbursements.

Data sources



Data on net financial flows from international financial institutions come from the World Bank's Debtor Reporting System. These data are published in the World Bank's *Global Development Finance 1999*. Data on aid from United Nations agencies come from the DAC chairman's report, *Development Co-operation*.

6.13 Foreign labor and population in OECD countries

	Foreign population[a]				Foreign labor force[b]		Inflows of foreign population			
	thousands		% of total population		% of total labor force		Total thousands		Asylum seekers thousands	
	1990	1996	1990	1996	1990	1996	1990	1996[c]	1990	1996[d]
Austria	456[e]	728	5.9	9.0	..	10.0	..	224.2	23[f]	6.7
Belgium	905	912	9.1	9.0	7.5	8.1	51[g]	51.9	13	11.6
Denmark	161	238	3.1	4.7	2.0	3.0	15	..	5	5.1
Finland	26	74	0.5	1.4	..	0.8	7	7.5	3	1.0
France	3,597[h]	3,597[h]	6.3	6.3	6.4	6.3	102	74.0	47	21.4
Germany	5,343[i]	7,314	8.4[i]	8.9	8.4	9.1	842	708.0	193	104.4
Ireland	80[j]	118	2.3[j]	3.2	2.6	3.5	..	..	..	3.9
Italy	781[k]	1,096[k]	1.4	2.0	..	1.7	..	..	5	1.4
Japan	1,075[l]	1,415	0.9[l]	1.1	..	0.9	224	225.4	..	..
Luxembourg	113	143	29.4	34.1	33.4	53.8	9	..	..	0.4
Netherlands	692	680	4.6	4.4	3.7	3.1	81[j]	77.2	21	34.4
Norway	143[m]	158	3.4[m]	3.6	..	2.6	16	17.2	4	2.3
Portugal	108[n]	173	1.1[n]	1.7	..	1.8	..	..	0	0.4
Spain	279[o]	539	0.7[o]	1.3	..	1.0	..	..	9	3.7
Sweden	484	527	5.6	6.0	5.6	5.1	53	29.3	29	9.7
Switzerland	1,100[p]	1,338	16.3[p]	19.0	..	17.9	101	74.3	36	23.9
United Kingdom	1,723[j]	1,972	3.2[j]	3.4	3.5	3.4	52	216.4	38[q]	41.5

	Foreign-born population[r]				Foreign-born labor force[s]		Inflows of foreign population			
	thousands		% of total population		% of total labor force		Total thousands		Asylum seekers thousands	
	1990	1996	1990	1996	1990	1996	1990	1996	1990	1997
Australia	4,125[t]	3,908	22.7[t]	21.1	25.8	24.6	121	99.1	4[u]	7.7
Canada	4,343[t]	4,971	15.6[t]	17.4	18.4[v]	18.5[r]	214	226.1	37	23.9
United States	19,767	24,600	7.9	9.3	9.4	10.8	1,537	915.9	74[w]	79.8

a. Except for France, Ireland, Portugal, and the United Kingdom, data are from population registers. Unless otherwise noted, they refer to the population on 31 December of the years indicated. b. Data include the unemployed except for Italy, Luxembourg, the Netherlands, Norway, and the United Kingdom. Data for Austria, Germany, and Luxembourg are from social security registers, data for Denmark are from the population register, and data for Norway are from the register of employees. Data for Italy, Portugal, Spain, and Switzerland are from residence or work permits. Figures for Japan and the Netherlands are estimates from national statistical offices. Data for other countries are from labor force surveys. c. Data are from population registers except for France (census), Ireland and the United Kingdom (labor force survey), Japan and Switzerland (register of foreigners), and Italy, Portugal, and Spain (residence permits). d. January to September 1997 for Italy, Luxembourg, Poland, and Spain. e. Annual average. f. Data do not include de facto refugees from Bosnia and Herzegovina. g. Includes some asylum seekers. h. Data are from the 1990 population census. i. Data refer to the Federal Republic of Germany before unification. j. Estimated from the annual labor force survey. k. Data are adjusted to take account of the regularizations in 1987–88 and 1990. Data for 1996 do not include permits delivered under the 1995–96 regularization program. l. Data refer to registered foreign nationals, who include foreigners staying in Japan for more than 90 days. m. Includes asylum seekers whose requests are being processed. n. Includes all foreigners who hold a valid residence permit. o. Data refer to foreigners with a residence permit. Those with permits for fewer than six months and students are excluded. p. Data refer to foreigners with an annual residence permit or with a settlement permit (permanent permit). q. Data adjusted to include dependents. r. Data are from the latest population census. s. Data are from labor force surveys except for Canada and the United States, for which data are from the latest population census. t. Data refer to 1991. u. Data refer to principal applicants and do not include dependents. v. Data refer to 1986. w. Data refer to the fiscal year (October to September of years shown).

Foreign labor and population in OECD countries 6.13

About the data

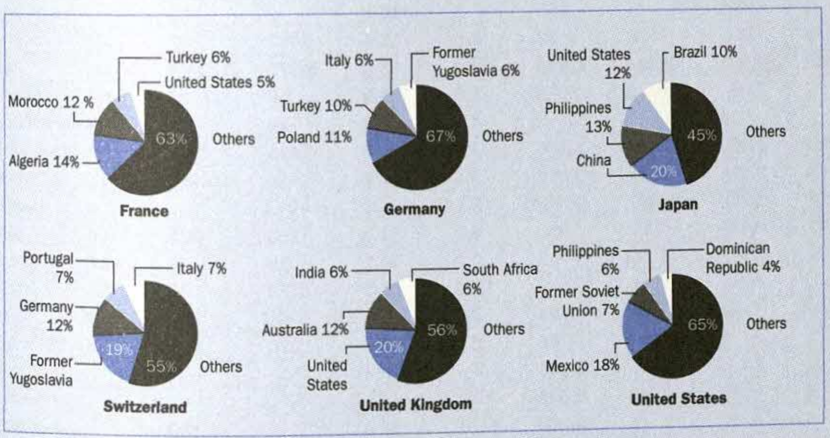
The data in the table are based on national definitions and data collection practices and are not fully comparable across countries. Japan and the European members of the Organisation for Economic Co-operation and Development (OECD) traditionally have defined foreigners by nationality of descent. Australia, Canada, and the United States use place of birth, which is closer to the concept of the immigrant stock as defined by the United Nations. Few countries, however, apply just one criterion in all circumstances. For this and other reasons data based on the concept of foreign nationality and data based on the concept of foreign-born cannot be completely reconciled.

Data on the size of the foreign labor force are also problematic. Countries use different permit systems to gather information on immigrants. Some countries issue a single permit for residence and work, while others issue separate residence and work permits. Differences in immigration laws across countries, particularly with respect to immigrants' access to the labor market, greatly affect the recording and measurement of migration and reduce the comparability of raw data at the international level. The data exclude temporary visitors and tourists (see table 6.14).

OECD countries are not the only ones that receive substantial migration flows. Migrant workers make up a significant share of the labor force in Gulf countries and in southern Africa, and people are displaced by wars and natural disasters throughout the world. Systematic recording of migration flows is difficult, however, especially in poor countries and those affected by civil disorder.

Figure 6.13

OECD countries drew immigrants from around the world in 1997



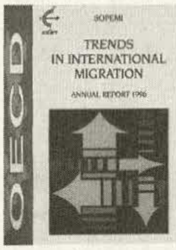
Source: OECD.

The graphs show the distribution of immigrants in 1997 by nationality. The definition of immigrants differs by reporting country and may include transient visitors. For the United States the data are for permanent settlers classified by country of birth.

Definitions

• **Foreign population** is the number of foreign or foreign-born residents in a country. • **Foreign labor force as a percentage of total labor force** is the share of foreign or foreign-born workers in a country's workforce. • **Inflows of foreign population** are the gross arrivals of immigrants in the country shown. The total does not include asylum seekers, except as noted. • **Asylum seekers** are those who apply for permission to remain in the country for humanitarian reasons.

Data sources



International migration data are collected by the OECD through information provided by national correspondents to the Continuous Reporting System on Migration (SOPEMI) network, which provides an annual overview of trends and policies. Data appear in the OECD's *Trends in International Migration* (1997d).

6.14 Travel and tourism

	International tourism				International tourism receipts				International tourism expenditures			
	Inbound tourists thousands		Outbound tourists thousands		$ millions		% of exports		$ millions		% of imports	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Albania	4	50	..	15	..	10	..	4.5	..	5	..	0.6
Algeria	946	635	698	1,800	115	20	0.8	0.1	333	64	2.7	0.6
Angola	..	8	..	..	..	9	..	0.2	..	73	..	1.6
Argentina	1,120	4,540	..	4,465	345	5,069	3.5	17.8	1,791	2,680	13.6	7.7
Armenia	..	..	..	..	..	12	..	3.6	..	41	..	4.3
Australia	905	4,286	*1,217*	2,933	967	9,324	3.8	11.1	1,749	6,129	6.5	7.5
Austria	13,879	16,646	3,525	13,263	6,442	12,393	24.2	14.5	2,847	10,992	9.5	12.5
Azerbaijan	..	146	..	..	..	159	..	13.8	..	72	..	3.8
Bangladesh	57	184	..	866	15	42	1.7	0.8	16	170	0.6	2.2
Belarus	..	250	..	*703*	..	49	..	0.6	..	114	..	1.3
Belgium	3,777	5,875	9,565	6,658	1,810	5,997	2.6	3.2	3,272	8,275	4.4	4.7
Benin	39	150	..	420	7	29	3.1	5.5	4	6	1.0	0.9
Bolivia	155	375	..	285	40	180	3.9	13.2	52	172	6.2	8.4
Bosnia and Herzegovina	..	100	..	..	..	15	..	..	..	..	..	..
Botswana	236	728	..	460	22	181	3.4	7.5	17	140	2.1	*8.4*
Brazil	1,271	2,995	427	4,852	1,794	2,602	8.2	4.3	1,160	6,583	4.2	8.2
Bulgaria	1,933	2,684	*759*	*3,006*	260	391	2.8	6.3	..	222	..	3.9
Burkina Faso	38	138	..	..	6	39	2.9	11.7	32	32	5.5	4.4
Burundi	34	11	..	30	22	1	..	1.0	17	10	..	7.2
Cambodia	..	219	..	45	..	145	..	16.2	..	12	..	1.0
Cameroon	86	102	14	..	62	39	3.5	1.6	82	107	4.5	5.2
Canada	12,876	17,610	*12,833*	19,111	2,284	8,928	3.0	3.6	3,122	11,284	4.4	4.8
Central African Republic	7	22	..	..	3	5	1.5	2.3	18	39	5.5	16.5
Chad	7	8	..	10	3	9	4.2	3.3	14	24	17.6	4.1
Chile	420	1,693	*379*	1,263	166	1,080	2.8	5.2	195	946	2.8	4.3
China	3,500	23,770	..	5,324	617	12,074	*3.6*	5.8	*66*	10,166	*0.3*	6.1
Hong Kong, China	1,748	10,406	916	3,758	1,317	9,242	5.1	4.0	..	..	..	..
Colombia	553	1,193	781	1,366	357	955	6.7	6.0	250	961	4.6	5.1
Congo, Dem. Rep.	23	30	..	..	22	2	0.9	0.1	38	7	1.6	0.5
Congo, Rep.	48	19	..	..	10	3	1.0	0.2	29	36	2.8	2.6
Costa Rica	345	811	*133*	288	87	752	7.3	16.8	62	348	3.7	7.5
Côte d'Ivoire	194	274	..	5	79	88	2.2	1.8	270	282	6.5	7.6
Croatia	..	3,834	..	..	..	2,165	..	26.4	..	521	..	4.6
Cuba	101	1,152	*7*	55	40	1,338	..	..	..	..	..	..
Czech Republic	..	16,830	..	..	..	3,700	..	12.4	..	2,380	..	7.3
Denmark	950	1,815	..	5,064	1,337	3,159	5.6	5.0	1,560	4,128	*5.8*	7.1
Dominican Republic	383	2,211	257	185	168	2,106	13.2	32.8	166	242	8.7	3.4
Ecuador	243	525	..	300	91	289	3.2	4.8	228	227	7.7	3.9
Egypt, Arab Rep.	1,253	3,657	1,180	2,945	808	3,847	12.9	23.8	573	1,347	6.3	7.4
El Salvador	118	385	464	627	7	67	0.6	2.5	106	75	9.1	1.9
Eritrea	..	492	..	..	..	75	..	37.2	..	..	..	..
Estonia	..	620	..	268	..	475	..	13.2	..	118	..	2.8
Ethiopia	42	115	25	140	11	36	1.9	3.5	5	40	0.6	2.4
Finland	350	1,828	*291*	5,233	677	1,630	4.0	3.4	544	2,270	3.1	6.0
France	30,100	66,864	7,930	17,115	8,235	28,316	5.4	7.8	6,027	16,755	3.9	5.2
Gabon	17	137	..	..	17	7	0.7	0.2	96	178	6.5	8.2
Gambia, The	22	80	..	..	18	22	27.2	9.6	1	16	0.6	5.7
Georgia	..	124	..	355	..	..	..	..	..	..	..	..
Germany[a]	11,122	15,837	22,473	77,517	6,566	16,418	2.9	2.8	20,599	45,536	9.1	8.1
Ghana	40	325	..	..	1	266	0.1	16.1	27	22	2.3	0.8
Greece	4,796	10,246	1,374	1,765	1,734	3,800	21.3	25.6	190	1,325	1.7	5.2
Guatemala	466	576	178	331	183	325	10.6	10.2	183	119	9.3	2.8
Guinea	..	95	..	..	..	5	..	0.7	..	23	..	2.8
Guinea-Bissau	..	..	..	..	..	..	..	..	..	..	..	..
Haiti	138	152	..	..	65	80	21.3	36.6	41	37	8.5	4.6
Honduras	122	257	..	165	27	120	2.9	5.5	31	62	2.7	2.5

Travel and tourism 6.14

	International tourism				International tourism receipts				International tourism expenditures			
	Inbound tourists thousands		Outbound tourists thousands		$ millions		% of exports		$ millions		% of imports	
	1980	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**	**1980**	**1997**
Hungary	9,413	17,248	5,164	12,173	160	2,570	*2.5*	10.5	88	1,153	*0.9*	4.6
India	1,194	2,374	1,017	3,500	1,150	3,152	10.2	7.1	113	1,342	0.7	2.3
Indonesia	527	5,036	635	2,200	246	6,589	*1.2*	10.4	375	2,436	*3.0*	3.9
Iran, Islamic Rep.	156	580	428	1,354	54	248	0.4	1.3	1,700	258	10.6	1.5
Iraq	1,222	346	443	..	170	13	..	..	..	..	..	..
Ireland	2,258	5,540	669	3,053	472	3,250	4.9	5.3	742	2,223	6.2	4.3
Israel	1,116	2,003	513	2,755	903	2,800	10.4	9.2	533	3,570	4.6	9.2
Italy	22,087	34,087	*23,994*	18,039	8,213	30,000	8.4	9.7	1,907	16,000	1.7	6.1
Jamaica	395	1,192	..	..	242	1,131	17.7	35.6	12	181	0.9	4.5
Japan	844	4,223	5,224	16,803	644	4,322	0.4	0.9	4,593	33,041	2.9	7.7
Jordan	393	1,127	720	1,233	431	760	36.5	19.5	301	398	12.5	7.0
Kazakhstan	..	..	..	..	..	..	..	..	..	445	..	5.4
Kenya	372	700	..	350	220	400	11.0	13.4	33	194	1.2	5.1
Korea, Dem. Rep.	..	128	..	..	..	..	..	..	..	..	..	..
Korea, Rep.	976	3,908	*436*	4,542	369	5,200	1.9	3.2	350	6,262	1.4	3.7
Kuwait	108	35	*230*	..	377	140	1.7	0.9	1,339	2,558	13.6	19.7
Kyrgyz Republic	..	13	..	42	..	4	..	0.6	..	4	..	0.5
Lao PDR	..	115	..	..	..	54	..	12.9	..	21	..	2.9
Latvia	..	98	..	2,013	..	183	..	6.4	..	326	..	9.7
Lebanon	..	558	..	..	..	1,000	..	64.2	..	..	..	..
Lesotho	73	112	..	..	12	20	13.3	6.5	8	8	1.7	0.7
Libya	126	94	95	185	10	6	0.0	..	470	215	3.7	..
Lithuania	..	288	..	2,981	..	360	..	6.9	..	290	..	4.6
Macedonia, FYR	..	..	..	..	..	..	..	..	..	..	..	..
Madagascar	13	84	..	35	5	67	1.0	8.7	31	48	2.9	4.5
Malawi	46	250	..	..	9	7	2.9	1.1	10	17	2.1	1.5
Malaysia	2,105	6,211	1,738	26,165	265	3,850	1.9	4.1	470	2,478	3.5	2.7
Mali	27	102	..	..	15	21	5.7	3.3	20	42	3.8	4.7
Mauritania	..	..	..	..	7	11	2.8	2.4	17	24	3.8	6.2
Mauritius	123	536	*33*	132	45	459	7.8	18.0	27	177	3.9	6.4
Mexico	11,945	19,351	3,322	8,910	5,393	7,593	23.8	6.2	4,174	3,892	15.1	3.2
Moldova	..	33	..	70	..	34	..	3.3	..	48	..	3.4
Mongolia	195	82	..	..	..	22	..	4.4	..	21	..	3.9
Morocco	1,425	3,115	578	1,203	397	1,200	12.3	12.6	98	315	1.9	3.0
Mozambique	..	..	..	..	..	..	..	..	..	..	..	..
Myanmar	38	185	..	..	10	32	1.9	2.2	3	25	0.4	1.0
Namibia	..	410	..	..	..	210	..	12.2	..	99	..	5.2
Nepal	163	418	*23*	110	45	119	20.1	9.2	26	103	7.1	5.6
Netherlands	2,784	6,674	6,749	10,200	1,668	6,597	1.8	3.1	4,664	10,232	5.1	5.4
New Zealand	465	1,615	454	1,132	211	2,510	3.3	14.1	534	1,451	7.7	7.9
Nicaragua	..	350	..	330	22	80	4.4	9.3	..	65	..	4.0
Niger	20	18	..	10	3	18	0.5	6.0	18	24	1.9	5.4
Nigeria	86	611	..	..	48	86	0.2	0.5	780	1,816	3.9	12.8
Norway	1,252	2,702	246	3,120	751	2,497	2.8	4.0	1,310	4,496	5.5	8.6
Oman	60	375	..	..	..	108	..	1.4	..	47	..	0.8
Pakistan	299	351	104	..	154	117	5.2	1.2	90	364	1.6	2.5
Panama	392	402	*113*	200	167	374	4.9	4.5	56	164	1.7	1.9
Papua New Guinea	40	66	..	63	12	72	1.2	2.9	18	81	1.4	3.0
Paraguay	302	387	..	369	91	759	13.0	17.5	35	193	2.7	3.9
Peru	373	635	127	577	208	682	4.5	8.2	107	485	2.7	4.5
Philippines	1,008	2,223	461	1,930	320	2,831	4.4	7.0	105	1,936	1.1	3.8
Poland	5,664	19,514	6,852	48,610	282	8,700	1.8	21.9	357	6,900	2.0	14.9
Portugal	2,730	10,100	..	2,425	1,147	4,264	17.2	13.2	290	2,164	2.9	5.3
Puerto Rico	1,639	3,332	2,758	1,325	619	1,996	..	..	400	895	..	..
Romania	..	2,741	1,711	6,243	..	550	..	5.6	..	690	..	5.5
Russian Federation	..	15,350	..	11,182	..	6,669	..	6.5	..	10,401	..	11.5

6.14 Travel and tourism

	International tourism				International tourism receipts				International tourism expenditures			
	Inbound tourists thousands		Outbound tourists thousands		$ millions		% of exports		$ millions		% of imports	
	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997	1980	1997
Rwanda	30	1	..	..	4	1	2.4	0.7	11	71	3.4	14.6
Saudi Arabia	2,475	3,594	..	..	1,344	1,420	1.3	2.2	2,453	..	4.4	..
Senegal	186	300	..	..	68	160	8.4	10.8	45	77	3.7	4.5
Sierra Leone	46	48	..	..	10	10	3.6	10.9	8	2	1.7	1.4
Singapore	2,562	6,542	..	3,671	1,433	7,993	5.9	5.1	322	*6,139*	1.3	4.3
Slovak Republic	..	808	..	403	..	535	..	4.9	..	439	..	3.5
Slovenia	..	974	..	..	..	1,275	..	12.2	..	544	..	5.1
South Africa	700	5,530	*572*	3,080	652	2,297	2.3	6.5	756	1,947	3.4	5.6
Spain	22,388	43,378	18,022	12,313	6,968	26,595	21.7	17.9	1,229	4,467	3.2	3.1
Sri Lanka	322	366	138	531	111	212	8.6	3.8	34	180	1.5	2.7
Sudan	25	64	..	200	52	8	6.7	1.3	*74*	34	*3.9*	2.1
Sweden	1,366	2,386	2,941	10,818	962	3,785	2.5	3.7	1,235	6,579	3.1	7.8
Switzerland	8,873	11,077	4,451	12,100	3,149	7,960	6.5	7.3	2,357	6,731	4.5	6.9
Syrian Arab Republic	1,239	842	*1,189*	1,900	156	1,250	6.3	22.1	177	545	3.9	10.7
Tajikistan	..	..	..	..	..	..	..	..	..	..	..	..
Tanzania	84	350	..	150	20	360	2.7	30.0	20	407	1.4	20.7
Thailand	1,859	7,263	497	1,660	867	8,700	10.9	12.0	244	1,888	2.4	2.6
Togo	92	92	..	..	13	13	2.4	2.1	22	19	3.2	2.6
Trinidad and Tobago	199	324	206	250	151	108	4.8	4.0	140	75	5.8	2.6
Tunisia	1,602	4,263	478	1,381	601	1,540	18.4	19.1	55	160	1.5	1.9
Turkey	921	9,040	1,795	4,633	327	7,000	9.0	13.5	115	1,363	1.4	2.4
Turkmenistan	..	238	..	31	..	7	..	0.9	..	125	..	12.5
Uganda	36	227	..	..	5	103	1.5	12.5	18	137	4.1	8.3
Ukraine	..	818	..	..	..	205	..	1.0	..	305	..	1.4
United Arab Emirates	300	1,792	..	..	..	..	..	..	..	..	..	..
United Kingdom	12,420	25,960	15,507	45,550	6,932	20,569	4.7	5.6	6,893	27,710	5.1	7.5
United States	22,500	48,409	22,721	52,735	10,058	75,056	3.7	8.0	10,385	54,183	3.6	5.2
Uruguay	1,067	2,316	640	562	298	759	19.5	17.8	203	264	9.5	5.9
Uzbekistan	..	..	..	..	..	..	..	..	..	..	..	..
Venezuela	215	796	747	460	243	1,063	1.2	4.2	1,880	2,381	12.4	13.0
Vietnam	..	1,716	..	..	..	88	..	0.8	..	..	..	..
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..	..	..
Yemen, Rep.	39	84	..	..	24	69	..	2.7	53	81	..	2.7
Yugoslavia, FR (Serb./Mont.)	..	298	..	..	..	42	..	..	..	..	..	..
Zambia	87	278	..	..	20	65	1.2	5.1	57	59	3.2	4.0
Zimbabwe	243	1,894	326	123	38	250	2.4	8.2	140	120	8.1	3.1
World	260,891 s	611,964 s	158,652 s	535,511 s	101,016 s	444,265 s	5.0 w	6.3 w	102,066 s	375,507 s	4.8 w	6.0 w
Low income	4,319	14,114	1,486	6,647	2,323	6,618	3.3	4.8	2,153	6,424	2.7	4.0
Middle income	63,181	216,194	33,531	169,443	20,120	117,766	4.7	8.2	20,333	72,353	5.7	5.5
Lower middle income	21,887	90,333	9,782	51,045	7,070	60,180	6.1	8.1	5,356	36,096	4.7	5.3
Upper middle income	41,294	125,861	23,749	118,398	13,050	57,586	4.3	8.3	14,977	36,257	6.2	5.7
Low & middle income	67,500	230,308	35,017	176,090	22,443	124,384	4.5	7.9	22,486	78,777	5.2	5.3
East Asia & Pacific	9,570	49,784	3,339	37,471	2,480	37,017	5.1	7.0	1,234	19,147	2.4	4.2
Europe & Central Asia	17,935	91,125	15,522	89,019	1,029	33,835	3.0	10.3	560	25,962	..	7.4
Latin America & Carib.	22,766	48,213	9,907	27,212	11,262	31,629	9.2	8.0	11,338	21,257	8.7	5.5
Middle East & N. Africa	11,815	22,229	4,620	12,173	4,589	12,388	2.5	7.8	6,366	3,750	5.0	..
South Asia	2,086	4,068	1,259	5,040	1,485	3,936	8.5	5.9	283	2,198	1.0	2.4
Sub-Saharan Africa	3,328	14,889	370	5,175	1,598	5,579	1.9	5.5	2,705	6,463	3.7	6.2
High income	193,391	381,320	123,635	359,421	78,573	319,879	4.6	5.8	79,580	296,730	4.6	6.2
Europe EMU	112,095	207,544	68,933	165,816	42,198	135,757	5.8	6.6	42,121	118,914	5.5	6.4

a. Data prior to 1990 refer to the Federal Republic of Germany before unification.

Travel and tourism 6.14

About the data

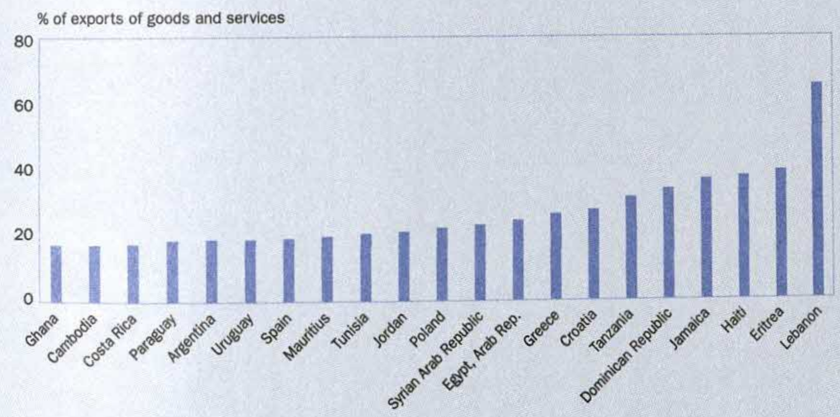
The data in the table are from the World Tourism Organization. They are obtained primarily from questionnaires sent to government offices, supplemented with data published by official sources. Although the World Tourism Organization reports that progress has been made in harmonizing definitions and measurement units, differences in national practices still prevent full international comparability.

Data on international inbound and outbound tourists refer to the number of arrivals and departures of visitors within the reference period, not to the number of people traveling. Thus a person who makes several trips to a country during a given period is counted each time as a new arrival.

Regional and income group aggregates are based on the World Bank's classification of countries and differ from those shown in the *Yearbook of Tourism Statistics*. Countries not shown in the table but for which data are available are included in the regional and income group totals. World totals are calculated by the World Tourism Organization and include all reporting countries as well as countries not separately reported on by the organization. Thus world totals may differ from the sums of the group totals.

Figure 6.14

Countries with tourism receipts accounting for more than 15 percent of exports in 1997



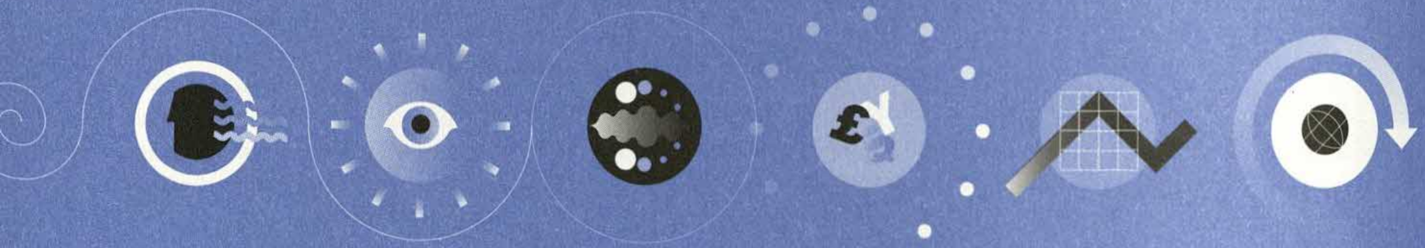
Source: World Tourism Organization and World Bank staff estimates.

Definitions

- **International inbound tourists** are the number of visitors who travel to a country other than that where they have their usual residence for a period not exceeding 12 months and whose main purpose in visiting is other than an activity remunerated from within the country visited. • **International outbound tourists** are the number of departures that people make from their country of usual residence to any other country for any purpose other than a remunerated activity in the country visited. • **International tourism receipts** are expenditures by international inbound visitors, including payments to national carriers for international transport. These receipts should include any other prepayment made for goods or services received in the destination country. They also may include receipts from same-day visitors, except in cases where these are so important as to justify a separate classification. Their share in exports is calculated as a ratio to exports of goods and services. • **International tourism expenditures** are expenditures of international outbound visitors in other countries, including payments to foreign carriers for international transport. These may include expenditures by residents traveling abroad as same-day visitors, except in cases where these are so important as to justify a separate classification. Their share in imports is calculated as a ratio to imports of goods and services.

Data sources

The visitor and expenditure data are available in the World Tourism Organization's *Yearbook of Tourism Statistics* and *Compendium of Tourism Statistics, 1992–1996.* Data in the table were updated from electronic files provided by the World Tourism Organization. Export and import data are from the International Monetary Fund's *International Financial Statistics* and World Bank staff estimates.



Statistical methods

This section describes some of the statistical procedures used in preparing the *World Development Indicators*. It covers the methods employed for calculating regional and income group aggregates and for calculating growth rates, and it describes the World Bank's Atlas method for deriving the conversion factor used to estimate GNP and GNP per capita in U.S. dollars. Other statistical procedures and calculations are described in the *About the data* sections that follow each table.

Aggregation rules

Aggregates based on the World Bank's regional and income classification of economies appear at the end of most tables. The World Bank's income and regional classifications are shown on the front and back cover flaps of the book. This year's *World Development Indicators* includes an aggregate of the member countries of the European Monetary Union (EMU). Members of the EMU on 1 January 1999 were Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Spain, and Portugal. Other classifications, such as the European Union and regional trading blocs, are documented in *About the data* for the tables in which they appear.

Because of missing data, aggregations for groups of economies should be treated as approximations for unknown totals or average values. Regional and income group aggregates are based on the largest available set of data, including values for the 148 economies shown in the main tables, other economies shown in table 1.6, and Taiwan, China. The aggregation rules are intended to yield estimates for a consistent set of economies from one period to the next and for all indicators. Small differences between the values of sums of subgroup aggregates and overall totals and averages may occur because of the approximations used. In addition, compilation errors and data reporting practices may cause discrepancies in theoretically identical aggregates such as world exports and world imports.

There are four principal methods of aggregation. For group and world totals denoted in the tables by a *t*, missing data are imputed based on the relationship of the sum of available data to the total in the year of the previous estimate. The imputation process works forward and backward from 1995. Missing values in 1995 are imputed using one of several proxy variables for which complete data are available in that year. The imputed value is calculated so that it (or its proxy) bears the same relationship to the total of available data as it did in the benchmark year. Imputed values are usually not calculated if missing data account for more than one-third of the total in the benchmark year. The variables used as proxies are GNP in U.S. dollars, GNP per capita in U.S. dollars, total population, exports and imports of goods and services in U.S. dollars, and value added in agriculture, industry, manufacturing, and services in local currency.

Aggregates marked by an *s* are sums of available data. Missing values are not imputed. Sums are not computed if more than one-third of the observations in the series or a proxy for the series are missing in a given year.

Aggregates of ratios are generally calculated as weighted averages of the ratios (indicated by *w*) using the value of the denominator or, in some cases, another indicator as a weight. The aggregate ratios are based on available data, including data for economies not shown in the main tables. Missing values are assumed to have the same average value as the available data. No aggregate is calculated if missing data account for more than one-third of the value of weights in the benchmark year. In a few cases the aggregate ratio may be computed as the ratio of group totals after imputing values for missing data according to the above rules for computing totals.

Aggregate growth rates are also generally calculated as a weighted average of growth rates (and indicated by a *w*). In a few cases growth rates may be computed from time series of group totals. Growth rates are not calculated if more than one-third of the observations in a period are missing. For further discussion of methods of computing growth rates see below.

Aggregates denoted by an *m* are medians of the values shown in the table. No value is shown if more than one-third of the observations are missing.

Exceptions to the rules occur throughout the book. Depending on the judgment of World Bank analysts, the aggregates may be based on as little as 50 percent of the available data. In other cases, where missing or excluded values are judged to be small or irrelevant, aggregates are based only on the data shown in the tables.

Growth rates

Growth rates are calculated as annual averages and represented as percentages. Except where noted, growth rates of values are computed from constant-price or real-value series. Three principal methods are used to calculate growth rates: least squares, exponential endpoint, and geometric endpoint. Rates of change from one period to the next are calculated as proportional changes from the earlier period.

Least-squares growth rate. Least-squares growth rates are used wherever there is a sufficiently long time series to permit a reliable calculation. No growth rate is calculated if more than half the observations in a period are missing.

The least-squares growth rate, r, is estimated by fitting a linear regression trendline to the logarithmic annual values of the variable in the relevant period. More specifically, the regression equation takes the form

$$\ln X_t = a + bt,$$

which is equivalent to the logarithmic transformation of the compound growth equation,

$$X_t = X_o (1 + r)^t.$$

In this equation, X is the variable, t is time, and $a = \log X_o$ and $b = \ln(1 + r)$ are parameters to be estimated. If b^* is the least-squares estimate of b, the average annual growth rate, r, is obtained as $[\exp(b^*) - 1]$ and is multiplied by 100 to express it as a percentage.

Statistical methods

The calculated growth rate is an average rate that is representative of the available observations over the entire period. It does not necessarily match the actual growth rate between any two periods.

Exponential growth rate. The growth rate between two points in time for certain demographic indicators, notably labor force and population, is calculated from the equation

$$r = \ln(p_n/p_1)/n,$$

where p_n and p_1 are the last and first observations in the period, n is the number of years in the period, and ln is the natural logarithm operator.

This growth rate is based on a model of continuous, exponential growth between two points in time. It does not take into account the intermediate values of the series. Note also that the exponential growth rate does not correspond to the annual rate of change measured at a one-year interval, which is given by $(p_n - p_{n-1})/p_{n-1}$.

Geometric growth rate. The geometric growth rate is applicable to compound growth over discrete periods, such as the payment and reinvestment of interest or dividends. Although continuous growth, as modeled by the exponential growth rate, may be more realistic, most economic phenomena are measured only at intervals, a case in which the compound growth model is appropriate. The average growth rate over n periods is calculated as

$$r = \exp[\ln(p_n/p_1)/n] - 1.$$

Like the exponential growth rate, it does not take into account intermediate values of the series.

World Bank Atlas method

In calculating GNP and GNP per capita in U.S. dollars for certain operational purposes, the World Bank uses a synthetic exchange rate commonly called the Atlas conversion factor. The purpose of the Atlas conversion factor is to reduce the impact of exchange rate fluctuations in the cross-country comparison of national incomes.

The Atlas conversion factor for any year is the average of a country's exchange rate (or alternative conversion factor) for that year and its exchange rates for the two preceding years, after adjusting for differences between the rate of inflation in the country and the G-5 countries (France, Germany, Japan, the United Kingdom, and the United States). A country's inflation rate is measured by its GNP deflator. The inflation rate for G-5 countries is measured by changes in the SDR deflator. (Special drawing rights, or SDRs, are the IMF's unit of account.) The SDR deflator is calculated as a weighted average of the G-5 countries' GDP deflators in SDR terms. The weights are determined by the amount of each currency included in one SDR unit. Weights vary over time because both the composition of the SDR and the relative exchange rates for each currency change. The SDR deflator is calculated in SDR terms first and then converted to U.S. dollars using the SDR to dollar Atlas conversion factor.

This three-year averaging smooths annual fluctuations in prices and exchange rates for each country. The Atlas conversion factor is then applied to a country's GNP. The resulting GNP in U.S. dollars is divided by the midyear population for the latest of the three years to derive GNP per capita. When official exchange rates are deemed to be unreliable or unrepresentative of the effective exchange rate during a period, an alternative estimate of the exchange rate is used in the Atlas formula (see below).

The following formulas describe the calculation of the Atlas conversion factor for year t:

$$e_t^* = \frac{1}{3}\left[e_{t-2}\left(\frac{p_t}{p_{t-2}} \Big/ \frac{p_t^{S\$}}{p_{t-2}^{S\$}} \right) + e_{t-1}\left(\frac{p_t}{p_{t-1}} \Big/ \frac{p_t^{S\$}}{p_{t-1}^{S\$}} \right) + e_t \right]$$

and the calculation of GNP per capita in U.S. dollars for year t:

$$Y_t^{\$} = (Y_t/N_t)/e_t^*,$$

where e_t^* is the Atlas conversion factor (national currency to the U.S. dollar) for year t, e_t is the average annual exchange rate (national currency to the U.S. dollar) for year t, p_t is the GNP deflator for year t, $p_t^{S\$}$ is the SDR deflator in U.S. dollar terms for year t, $Y_t^{\$}$ is the Atlas GNP in U.S. dollars in year t, Y_t is current GNP (local currency) for year t, and N_t is midyear population for year t.

Alternative conversion factors

The World Bank systematically assesses the appropriateness of official exchange rates as conversion factors. An alternative conversion factor is used when the official exchange rate is judged to diverge by an exceptionally large margin from the rate effectively applied to domestic transactions of foreign currencies and traded products. This applies to only a small number of countries as shown in *Primary data documentation*. Alternative conversion factors are used in the Atlas methodology and elsewhere in the *World Development Indicators* as single-year conversion factors.

Primary data documentation

The World Bank is not a primary data collection agency for most areas other than living standards surveys and debt. As a major user of socioeconomic data, however, the World Bank places particular emphasis on data documentation to inform users of data in economic analysis and policymaking. The tables in this section provide information on the sources, treatment, and currentness of the principal demographic, economic, and environmental indicators in the *World Development Indicators*.

Differences in the methods and conventions used by the primary data collectors—usually national statistical agencies, central banks, and customs services—may give rise to significant discrepancies over time both among and within countries. Delays in reporting data and the use of old surveys as the base for current estimates may severely compromise the quality of national data.

Although data quality is improving in some countries, many developing countries lack the resources to train and maintain the skilled staff and obtain the equipment needed to measure and report demographic, economic, and environmental trends in an accurate and timely way. The World Bank recognizes the need for reliable data to measure living standards, track and evaluate economic trends, and plan and monitor development projects. Thus, working with bilateral and other multilateral agencies, it has funded and participated in technical assistance projects to improve statistical organization and basic data methods, collection, and dissemination.

The World Bank is working at several levels to meet the challenge of improving the quality of the data that it collates and disseminates. At the country level the Bank is carrying out technical assistance, training, and survey activities—with a view to strengthening national capacity—in the following areas:

- Poverty assessments in most borrower member countries.
- Living standards measurement and other household and farm surveys with country partner statistical agencies.
- National accounts and inflation.
- Price and expenditure surveys for the International Comparison Programme.
- Statistical improvement projects in the countries of the former Soviet Union.
- External debt management.
- Environmental and economic accounting.

Primary data documentation

	National currency	Fiscal year end	National accounts					Balance of payments and trade			Government finance	IMF special data dissemination
			Reporting period	Base year	SNA price valuation	Alternative conversion factor	PPP survey year	Balance of Payments Manual in use	External debt	System of trade	Accounting concept	
Albania	Albanian lek	Dec. 31	CY	1993	VAP	1996–97		BPM5	Actual	G		
Algeria	Algerian dinar	Dec. 31	CY	1980	VAB			BPM5	Actual	S		
Angola	Angolan adjusted kwanza	Dec. 31	CY	1997	VAP	1986–97		BPM4	Actual	S		
Argentina	Argentine peso	Dec. 31	CY	1986	VAP	1972–81	1980	BPM5	Actual	S	C	S*
Armenia	Armenian dram	Dec. 31	CY	1993	VAB	1985–95	1990	BPM5	Actual			
Australia	Australian dollar	Jun. 30	FY	1989	VAP		1993	BPM5		G	C	S
Austria	Austrian schilling[a]	Dec. 31	CY	1983	VAP		1993	BPM5		S	C	S
Azerbaijan	Azeri manat	Dec. 31	CY	1995	VAP	1987–97	1990	BPM4	Preliminary			
Bangladesh	Bangladesh taka	Jun. 30	FY	1990[b]	VAP	1971–97	1993	BPM5	Actual	G		
Belarus	Belarussian rubel	Dec. 31	CY	1990	VAB	1987–97	1993	BPM5	Actual		C	
Belgium	Belgian franc[a]	Dec. 31	CY	1990	VAP		1993	BPM5		S	C	S
Benin	CFA franc	Dec. 31	CY	1985	VAP	1992	1993	BPM4	Actual	S		
Bolivia	Boliviano	Dec. 31	CY	1990	VAP	1985	1980	BPM4	Actual	S	C	
Bosnia and Herzegovina	Convertible mark	Dec. 31	CY	1987	VAP			BPM5	Preliminary			
Botswana	Botswana pula	Jun. 30	FY	1986	VAP	1975–97	1993	BPM5	Actual	G	B	
Brazil	Brazilian real	Dec. 31	CY	1995	VAB		1980	BPM5	Preliminary	S	C	
Bulgaria	Bulgarian leva	Dec. 31	CY	1990	VAP	1985–92	1993	BPM5	Preliminary	G	C	
Burkina Faso	CFA franc	Dec. 31	CY	1985	VAB	1992–93		BPM4	Actual	S	C	
Burundi	Burundi franc	Dec. 31	CY	1980	VAB			BPM5	Actual	S		
Cambodia	Cambodian riel	Dec. 31	CY	1989	VAP	1987–93		BPM5	Preliminary	S		
Cameroon	CFA franc	Jun. 30	FY	1980	VAP	1970–97	1993	BPM5	Preliminary	S	C	
Canada	Canadian dollar	Mar. 31	CY	1992	VAB		1993	BPM5		G	C	S*
Central African Republic	CFA franc	Dec. 31	CY	1987	VAB			BPM4	Preliminary	S		
Chad	CFA franc	Dec. 31	CY	1995	VAB			BPM4	Preliminary	S	C	
Chile	Chilean peso	Dec. 31	CY	1986	VAP	1993–96	1980	BPM5	Actual	S	C	S
China	Chinese yuan	Dec. 31	CY	1990	VAP	1987–93	1986	BPM5	Estimate	G	B	
Hong Kong, China	Hong Kong dollar	Dec. 31	CY	1990	VAB		1993	BPM4		G		S*
Colombia	Colombian peso	Dec. 31	CY	1975	VAP	1991–94	1980	BPM5	Estimate	S	C	S*
Congo, Dem. Rep.	New zaire	Dec. 31	CY	1987	VAP	1993–97		BPM5	Estimate	S	C	
Congo, Rep.	CFA franc	Dec. 31	CY	1978	VAP	1993	1993	BPM4	Estimate	S		
Costa Rica	Costa Rican colon	Dec. 31	CY	1966	VAP		1980	BPM4	Estimate	S	C	
Côte d'Ivoire	CFA franc	Dec. 31	CY	1986	VAP		1993	BPM5	Estimate	S	C	
Croatia	Croatian kuna	Dec. 31	CY	1994	VAB		1993	BPM5	Preliminary		C	S*
Cuba	Cuban peso	Dec. 31	CY	..	..					S		
Czech Republic	Czech koruna	Dec. 31	CY	1984	VAP		1993	BPM5	Preliminary	G	C	S
Denmark	Danish krone	Dec. 31	CY	1990	VAB		1993	BPM5		G	C	S
Dominican Republic	Dominican peso	Dec. 31	CY	1970	VAP		1980	BPM5	Actual	G	C	
Ecuador	Ecuadorian sucre	Dec. 31	CY	1975	VAP		1980	BPM5	Actual	G	B	S
Egypt, Arab Rep.	Egyptian pound	Jun. 30	FY	1992	VAB	1970–91	1993	BPM5	Actual	S	C	
El Salvador	Salvadoran colón	Dec. 31	CY	1990	VAP	1982–90	1980	BPM5	Actual	S	B	S
Eritrea	Eritrean nakfa	Dec. 31	CY	1992	VAB			BPM4	Actual			
Estonia	Estonian kroon	Dec. 31	CY	1995	VAB	1987–95	1993	BPM5	Actual		C	S
Ethiopia	Ethiopian birr	Jul. 7	FY	1981	VAB	1989–97	1985	BPM5	Actual	G	B	
Finland	Finnish markka[a]	Dec. 31	CY	1990	VAB		1993	BPM5		G	C	S
France	French franc[a]	Dec. 31	CY	1980	VAP		1993	BPM5		S	C	S
Gabon	CFA franc	Dec. 31	CY	1991	VAP	1993	1993	BPM5	Actual	S	B	
Gambia, The	Gambian dalasi	Jun. 30	CY	1987	VAB			BPM5	Estimate	G	B	
Georgia	Georgian lari	Dec. 31	CY	1994	VAB	1990–97	1990	BPM4	Actual			
Germany	Deutsche mark[a]	Dec. 31	CY	1991	VAP		1993	BPM5		S	C	S
Ghana	Ghanaian cedi	Dec. 31	CY	1975	VAP	1973–87		BPM5	Actual	G	C	
Greece	Greek drachma	Dec. 31	CY	1990	VAB		1993	BPM4	Estimate	S	C	
Guatemala	Guatemalan quetzal	Dec. 31	CY	1958	VAP	1985–86	1980	BPM5	Actual	S	B	
Guinea	Guinean franc	Dec. 31	CY	1994	VAB		1993	BPM5	Estimate	S	C	
Guinea-Bissau	CFA franc	Dec. 31	CY	1986	VAP	1970–86		BPM5	Actual	S		
Haiti	Haitian gourde	Sep. 30	FY	1976	VAP	1991–97		BPM5	Preliminary	G		
Honduras	Honduran lempira	Dec. 31	CY	1978	VAB	1988–89	1980	BPM5	Actual	S		

	Latest population census	Latest household or demographic survey	Vital registration complete	Latest agricultural census	Latest industrial data	Latest water withdrawal data	Latest survey of scientists and engineers engaged in R&D	Latest survey of expenditure for R&D
Albania	1989	LSMS, 1996	✓	1995	1993	1970		
Algeria	1987	PAPCHILD, 1992		1973	1993	1990		
Angola	1970			1964–65		1987		
Argentina	1991		✓	1988	1993	1976	1995	1995
Armenia	1989		✓		1991	1994		
Australia	1996		✓	1990	1992	1985	1994	1994
Austria	1991		✓	1990	1994	1991	1993	1995
Azerbaijan	1989		✓			1995		
Bangladesh	1991	DHS, 1996–97		1977	1992	1987	1993	1993
Belarus	1989		✓	1994		1990	1995	1995
Belgium	1991		✓	1990	1994	1980	1991	1991
Benin	1992	DHS, 1996		1992	1981	1994	1989	1989
Bolivia	1992	DHS, 1997			1994	1987	1991	1991
Bosnia and Herzegovina	1991		✓		1991			
Botswana	1991	DHS, 1988		1993	1994	1992		
Brazil	1991	DHS, 1996		1996	1992	1990	1995	1995
Bulgaria	1992	LSMS, 1995	✓		1994	1988	1996	1996
Burkina Faso	1996	DHS, 1998		1993	1983	1992		
Burundi	1990				1991	1987	1989	1989
Cambodia	1998					1987		
Cameroon	1987	DHS, 1997		1972–73	1994	1987		
Canada	1991		✓	1991	1993	1991	1993	1995
Central African Republic	1988	DHS, 1994–95			1992	1987	1990	1990
Chad	1993	DHS, 1996–97				1987		
Chile	1992		✓	1997	1993	1975	1995	1995
China	1990	Population, 1995		1996	1994	1980	1995	1995
Hong Kong, China	1996		✓		1993		1995	1995
Colombia	1993	DHS, 1995		1988	1992	1987	1982	1982
Congo, Dem. Rep.	1984			1990		1990		
Congo, Rep.	1984			1986	1998	1987	1984	1984
Costa Rica	1984	CDC, 1993	✓	1973	1994	1970	1996	1991
Côte d'Ivoire	1998	DHS, 1997		1974–75	1993	1987		
Croatia	1991		✓		1992		1995	1995
Cuba	1981		✓		1989	1975	1995	1995
Czech Republic	1991	CDC, 1993	✓	1990	1993	1991	1995	1995
Denmark	1991		✓	1989	1991	1990	1993	1993
Dominican Republic	1993	DHS, 1996		1971	1985	1987		
Ecuador	1990	LSMS, 1995		1997	1994	1987	1990	1990
Egypt, Arab Rep.	1996	DHS, 1997	✓	1989–90	1992	1993	1991	1995
El Salvador	1992	CDC, 1994		1970–71	1994	1975	1992	1992
Eritrea	1984	DHS, 1995						
Estonia	1989		✓	1994		1995	1995	1995
Ethiopia	1994	Family and fertility, 1990		1989–92	1990	1987		
Finland	1990		✓	1990	1994	1991	1995	1995
France	1990	Income, 1989	✓	1988	1994	1990	1994	1994
Gabon	1993			1974–75	1982	1987	1987	1986
Gambia, The	1993				1982	1982		
Georgia	1989		✓		1992	1990	1991	1991
Germany			✓	1993	1993	1991	1993	1993
Ghana	1984	DHS, 1993		1984	1987	1970		
Greece	1991		✓	1993	1993	1980	1993	1993
Guatemala	1994	DHS, 1995	✓	1979	1990	1970	1988	1988
Guinea	1996	SDA, 1994–95		1989		1987	1984	1984
Guinea-Bissau	1991	SDA, 1991		1988		1991		
Haiti	1982	DHS, 1994–95		1971		1987		
Honduras	1988	CDC, 1994		1993	1994	1992		

Primary data documentation

	National currency	Fiscal year end	National accounts					Balance of payments and trade			Government finance	IMF special data dissemination
			Reporting period	Base year	SNA price valuation	Alternative conversion factor	PPP survey year	Balance of Payments Manual in use	External debt	System of trade	Accounting concept	
Hungary	Hungarian forint	Dec. 31	CY	1994	VAB		1993	BPM5	Actual	G	C	S
India	Indian rupee	Mar. 31	FY	1980	VAB		1985	BPM5	Preliminary	G	C	S
Indonesia	Indonesian rupiah	Mar. 31	CY	1993	VAP		1993	BPM5	Preliminary	S	C	S*
Iran, Islamic Rep.	Iranian rial	Mar. 20	FY	1982	VAB	1980–97	1993	BPM5	Actual	S	C	
Iraq	Iraqi dinar	Dec. 31	CY	1969	VAB					S		
Ireland	Irish pound[a]	Dec. 31	CY	1990	VAB		1993	BPM5		G	C	S
Israel	Israeli new shekel	Dec. 31	CY	1995	VAB		1980	BPM4		S	C	S*
Italy	Italian lira[a]	Dec. 31	CY	1990	VAP		1993	BPM5		S	C	S
Jamaica	Jamaica dollar	Dec. 31	CY	1986	VAP	1995–97	1993	BPM5	Preliminary	G		
Japan	Japanese yen	Mar. 31	CY	1990	VAP		1993	BPM5		G	C	S
Jordan	Jordan dinar	Dec. 31	CY	1985	VAB		1993	BPM5	Actual	G	B	
Kazakhstan	Kazakh tenge	Dec. 31	CY	1993	VAB	1987–95	1990	BPM5	Actual			
Kenya	Kenya shilling	Jun. 30	CY	1982	VAB		1993	BPM5	Preliminary	G	B	
Korea, Dem. Rep.	Democratic Republic of Korea won	Dec. 31	CY	1990	VAP			BPM5				
Korea, Rep.	Korean won	Dec. 31	CY	1990	VAP		1993	BPM5	Estimate	S	C	S
Kuwait	Kuwaiti dinar	Jun. 30	CY	1984	VAP			BPM5		S	C	
Kyrgyz Republic	Kyrgyz som	Dec. 31	CY	1995	VAB	1985–95	1990	BPM5	Actual			
Lao PDR	Lao kip	Dec. 31	CY	1990	VAB	1965–89		BPM5	Preliminary			
Latvia	Latvian lat	Dec. 31	CY	1993	VAB	1987–95	1993	BPM5	Actual		C	S
Lebanon	Lebanese pound	Dec. 31	CY	1994	VAB		1993	BPM4	Actual	G		
Lesotho	Lesotho loti	Mar. 31	CY	1980	VAB			BPM5	Actual	G	C	
Libya	Libyan dinar	Dec. 31	CY	1975	VAB		1993	BPM5		G		
Lithuania	Lithuanian litas	Dec. 31	CY	1993	VAB	1987–95		BPM5	Preliminary		C	S
Macedonia, FYR	Macedonian denar	Dec. 31	CY	1996	VAP	1992–97		BPM5	Preliminary			
Madagascar	Malagasy franc	Dec. 31	CY	1984	VAB		1993	BPM5	Actual	S	C	
Malawi	Malawi kwacha	Mar. 31	CY	1978	VAB		1985	BPM5	Estimate	G	B	
Malaysia	Malaysian ringgit	Dec. 31	CY	1978	VAP		1993	BPM4	Preliminary	G	C	S
Mali	CFA franc	Dec. 31	CY	1987	VAB		1985	BPM4	Actual	S		
Mauritania	Mauritanian ouguiya	Dec. 31	CY	1985	VAB			BPM4	Actual	S		
Mauritius	Mauritian rupee	Jun. 30	CY	1992	VAB		1985	BPM5	Actual	G	C	
Mexico	Mexican new peso	Dec. 31	CY	1993[b]	VAP			BPM5	Actual	G	C	S*
Moldova	Moldovan leu	Dec. 31	CY	1996	VAB	1987–95	1993	BPM5	Actual			
Mongolia	Mongolian tugrik	Dec. 31	CY	1986	VAP	1993		BPM5	Preliminary		C	
Morocco	Moroccan dirham	Dec. 31	CY	1980	VAP		1985	BPM5	Preliminary	S	C	
Mozambique	Mozambican metical	Dec. 31	CY	1995	VAB	1992–95		BPM5	Preliminary	S		
Myanmar	Myanmar kyat	Mar. 31	FY	1985	VAP			BPM5	Actual	G	C	
Namibia	Namibia dollar	Mar. 31	CY	1990	VAB			BPM5	Estimate		C	
Nepal	Nepalese rupee	Jul. 14	FY	1985	VAB	1973–97	1993	BPM5	Actual	G	C	
Netherlands	Netherlands guilder[a]	Dec. 31	CY	1990	VAP		1993	BPM5		S	C	S
New Zealand	New Zealand dollar	Mar. 31	FY	1990	VAP		1993	BPM4		G	B	
Nicaragua	Nicaraguan gold cordoba	Dec. 31	CY	1980	VAP	1970–93		BPM5	Actual	G	C	
Niger	CFA franc	Dec. 31	CY	1987	VAP	1993		BPM5	Actual	S		
Nigeria	Nigerian naira	Dec. 31	CY	1987	VAB	1971–97	1993	BPM5	Estimate	G		
Norway	Norwegian krone	Dec. 31	CY	1990	VAP		1993	BPM5		G	C	S
Oman	Rial Omani	Dec. 31	CY	1978	VAP		1993	BPM5	Actual	G	B	
Pakistan	Pakistan rupee	Jun. 30	FY	1981	VAB	1972–97	1980	BPM5	Actual	G	C	
Panama	Panamanian balboa	Dec. 31	CY	1982	VAB			BPM5	Actual	S	C	
Papua New Guinea	Papua New Guinea kina	Dec. 31	CY	1983	VAP		1980	BPM5	Actual	G	B	
Paraguay	Paraguayan guarani	Dec. 31	CY	1982	VAP	1982–86	1980	BPM5	Actual	S	C	
Peru	Peruvian new sol	Dec. 31	CY	1979	VAP	1986–91	1993	BPM5	Actual	S	C	S*
Philippines	Philippine peso	Dec. 31	CY	1985	VAP		1993	BPM5	Actual	G	B	S
Poland	Polish zloty	Dec. 31	CY	1990	VAP	1978	1993	BPM5	Actual	G	C	S
Portugal	Portuguese escudo[a]	Dec. 31	CY	1990	VAP		1993	BPM5		S	C	S
Puerto Rico	U.S. dollar	Dec. 31	CY	1954	VAP		1993					
Romania	Romanian leu	Dec. 31	CY	1993	VAB	1987–96	1993	BPM5	Estimate	G	C	
Russian Federation	Russian ruble	Dec. 31	CY	1996	VAB	1989–94	1993	BPM5	Estimate		C	

	Latest population census	Latest household or demographic survey	Vital registration complete	Latest agricultural census	Latest industrial data	Latest water withdrawal data	Latest survey of scientists and engineers engaged in R&D	Latest survey of expenditure for R&D
Hungary	1990	Income, 1995	✓	1994	1994	1991	1995	1995
India	1991	National family health, 1992–93		1986	1992	1975	1994	1994
Indonesia	1990	DHS, 1997		1993	1994	1987	1995	1995
Iran, Islamic Rep.	1991	Demographic, 1995		1988	1993	1993	1994	1994
Iraq	1997			1981	1992	1970	1993	1993
Ireland	1996		✓	1991	1994	1980	1993	1993
Israel	1995		✓	1983	1993	1989	1992	1992
Italy	1991		✓	1990	1991	1990	1994	1994
Jamaica	1991	LSMS, 1994	✓	1979	1992	1975	1986	1986
Japan	1995		✓	1990	1993	1990	1994	1994
Jordan	1994	DHS, 1997			1994	1993	1986	1989
Kazakhstan	1989	DHS, 1995	✓			1993		
Kenya	1989	DHS, 1998		1981	1994	1990		
Korea, Dem. Rep.	1993					1987		
Korea, Rep.	1995			1991	1994	1994	1994	1994
Kuwait	1995		✓	1970	1993	1974	1984	1984
Kyrgyz Republic	1989	DHS, 1997	✓			1994	1994	1995
Lao PDR	1995					1987		
Latvia	1989		✓	1994	1994	1994	1995	1995
Lebanon	1970			1970		1994	1980	1980
Lesotho	1996	DHS, 1991		1989–90	1994	1987		
Libya	1995	PAPCHILD, 1995		1987	1989	1994	1980	1980
Lithuania	1989		✓	1994	1994	1993	1996	1996
Macedonia, FYR	1994		✓		1994		1995	1995
Madagascar	1993	DHS, 1998		1984	1988	1984	1994	1995
Malawi	1987	DHS, 1996		1981	1989	1994		
Malaysia	1991		✓		1993	1975	1992	1992
Mali	1987	DHS, 1995–96		1978	1981	1987		
Mauritania	1988	PAPCHILD, 1990		1985		1985		
Mauritius	1990	CDC, 1991	✓		1993	1974	1992	1992
Mexico	1990	Population, 1995		1991	1991	1991	1995	1995
Moldova	1989		✓			1992	1995	1995
Mongolia	1989				1994	1987	1995	1995
Morocco	1994	DHS, 1995		1962	1994	1992		
Mozambique	1997	DHS, 1997				1992		
Myanmar	1983			1993	1993	1987		
Namibia	1991	DHS, 1992		1960		1991		
Nepal	1991	DHS, 1996		1992	1993	1987	1980	1980
Netherlands	1991		✓	1989	1993	1991	1991	1994
New Zealand	1996		✓	1990	1992	1991	1993	1993
Nicaragua	1995	LSMS, 1993		1963	1985	1975	1987	1987
Niger	1988	DHS, 1997		1980	1982	1988		
Nigeria	1991	Consumption and expenditure, 1992		1960	1990	1987	1987	1987
Norway	1990		✓	1989	1992	1985	1995	1995
Oman	1993	Child health, 1989		1979	1993	1991		
Pakistan	1998	LSMS, 1991		1990	1990	1991	1990	1987
Panama	1990			1990	1992	1975	1986	1986
Papua New Guinea	1989	DHS, 1996			1989	1987		
Paraguay	1992	DHS, 1990; CDC, 1992		1991	1981	1987		
Peru	1993	DHS, 1996		1994	1992	1987	1994	1995
Philippines	1995	DHS, 1998		1991	1992	1975	1992	1992
Poland	1988		✓	1990	1994	1991	1995	1995
Portugal	1991		✓	1989	1994	1990	1995	1995
Puerto Rico	1990		✓	1987	1994			
Romania	1992	LSMS, 1994–95	✓		1993	1994	1994	1995
Russian Federation	1989	LSMS, 1992	✓	1994–95	1994	1994	1995	1995

Primary data documentation

	National currency	Fiscal year end	National accounts					Balance of payments and trade			Government finance	IMF special data dissemination
			Reporting period	Base year	SNA price valuation	Alternative conversion factor	PPP survey year	Balance of Payments Manual in use	External debt	System of trade	Accounting concept	
Rwanda	Rwanda franc	Dec. 31	CY	1985	VAB	1994	1985	BPM5	Actual	G	C	
Saudi Arabia	Saudi Arabian riyal	Hijri year	Hijri year	1970	VAP			BPM4	Estimate	S		
Senegal	CFA franc	Dec. 31	CY	1987	VAP	1992–93	1993	BPM5	Preliminary	S		
Sierra Leone	Sierra Leonean leone	Jun. 30	CY	1990	VAB	1974–79	1993	BPM5	Estimate	G	B	
Singapore	Singapore dollar	Mar. 31	CY	1990	VAP		1993	BPM5		G	C	S*
Slovak Republic	Slovak koruna	Dec. 31	CY	1993	VAP		1993	BPM5	Preliminary			S
Slovenia	Slovenian tolar	Dec. 31	CY	1993	VAB		1993	BPM5	Actual			S*
South Africa	South African rand	Mar. 31	CY	1990	VAB			BPM5	Estimate		C	S*
Spain	Spanish peseta[a]	Dec. 31	CY	1986	VAP		1993	BPM5		S	C	S
Sri Lanka	Sri Lanka rupee	Dec. 31	CY	1982	VAB		1985	BPM5	Actual	G	C	
Sudan	Sudanese pounds	Jun. 30	CY	1982	VAB	1980–91		BPM4	Estimate	G		
Sweden	Swedish krona	Jun. 30	CY	1990	VAB		1993	BPM5		G	C	S
Switzerland	Swiss franc	Dec. 31	CY	1990	VAP		1993	BPM5	Estimate	S	C	S*
Syrian Arab Republic	Syrian pound	Dec. 31	CY	1985	VAP	1970–97	1993	BPM5	Estimate	S	C	
Tajikistan	Tajik ruble	Dec. 31	CY	1993	VAP	1987–97		BPM4	Actual			
Tanzania	Tanzania shilling	Jun. 30	CY	1992	VAB	1981–94	1993	BPM5	Actual	G		
Thailand	Thai baht	Sep. 30	CY	1988	VAP		1993	BPM5	Preliminary	G	C	S*
Togo	CFA franc	Dec. 31	CY	1978	VAP		1983	BPM5	Actual	S		
Trinidad and Tobago	Trinidad and Tobago dollar	Dec. 31	CY	1985	VAB	1992		BPM5	Preliminary	S		
Tunisia	Tunisian dinar	Dec. 31	CY	1990	VAP		1993	BPM5	Preliminary	G	C	
Turkey	Turkish lira	Dec. 31	CY	1994	VAB		1993	BPM5	Actual	S	C	S*
Turkmenistan	Turkmen manat	Dec. 31	CY	1987	VAP	1990–97	1990	BPM5	Actual			
Uganda	Uganda shilling	Jun. 30	FY	1991	VAB	1980–97		BPM4	Estimate	G		
Ukraine	Ukraine hryvnia	Dec. 31	CY	1990	VAB	1987–95	1993	BPM5	Actual			
United Arab Emirates	U.A.E. dirham	Dec. 31	CY	1985	VAB			BPM4		G	B	
United Kingdom	Pound sterling	Dec. 31	CY	1990	VAB		1993	BPM5		G	C	S*
United States	U.S. dollar	Sep. 30	CY	1992	VAP		1993	BPM5		G	C	S
Uruguay	Uruguayan peso	Dec. 31	CY	1983	VAP		1980	BPM5	Actual	S	C	
Uzbekistan	Uzbek sum	Dec. 31	CY	1987	VAB	1991–96	1990	BPM4	Actual			
Venezuela	Venezuelan bolívar	Dec. 31	CY	1984	VAP		1980	BPM5	Estimate	G	C	
Vietnam	Vietnamese dong	Dec. 31	CY	1989	VAP	1991–97	1993	BPM4	Estimate			
West Bank and Gaza	Israeli new shekel	Dec. 31	CY	..	VAP							
Yemen, Rep.	Yemen rial	Dec. 31	CY	1990	VAB	1990–97	1993	BPM5	Estimate	G	C	
Yugoslavia, FR (Serb./Mont.)	Yugoslav new dinar	Dec. 31	CY	1984	VAP		1985		Estimate	S		
Zambia	Zambian kwacha	Dec. 31	CY	1994	VAP	1990–92	1993	BPM5	Preliminary	G	C	
Zimbabwe	Zimbabwe dollar	Jun. 30	CY	1990	VAB		1993	BPM5	Actual	G	C	

Note: For explanation of the abbreviations used in the table see the notes.

a. European Monetary Union member currency linked to the euro. b. Country uses the 1993 System of National Accounts methodology.

	Latest population census	Latest household or demographic survey	Vital registration complete	Latest agricultural census	Latest industrial data	Latest water withdrawal data	Latest survey of scientists and engineers engaged in R&D	Latest survey of expenditure for R&D
Rwanda	1991	DHS, 1992		1984	1986	1993	1995	1995
Saudi Arabia	1992	Maternal and child health, 1993		1983	1989	1992		
Senegal	1988	DHS, 1997		1960	1994	1987	1981	1981
Sierra Leone	1985	SHEHEA, 1989–90		1985	1993	1987		
Singapore	1990	General household, 1995	✓		1994	1975	1995	1995
Slovak Republic	1991		✓		1994	1991	1995	1995
Slovenia	1991		✓	1991	1994		1995	1995
South Africa	1996	DHS, 1997			1992	1990	1993	1993
Spain	1991		✓	1989	1992	1991	1994	1994
Sri Lanka	1981	DHS, 1993	✓	1982	1993	1970	1985	1985
Sudan	1993	DHS, 1989–90				1995		
Sweden	1990		✓	1981	1994	1991	1993	1993
Switzerland	1990		✓	1990	1994	1991	1990	1990
Syrian Arab Republic	1994	PAPCHILD, 1995		1981	1992	1993		
Tajikistan	1989		✓	1994		1994	1992	1992
Tanzania	1988	DHS, 1996		1995	1988	1994		
Thailand	1990	DHS, 1987		1988	1991	1987	1995	1995
Togo	1981	DHS, 1998		1983	1984	1987		
Trinidad and Tobago	1990	DHS, 1987	✓	1982	1993	1975	1984	1984
Tunisia	1994	PAPCHILD, 1994–95		1961	1993	1990	1992	1992
Turkey	1997	DHS, 1993		1991	1993	1992	1995	1995
Turkmenistan	1995		✓			1994		
Uganda	1991	DHS, 1995		1991	1989	1970		
Ukraine	1991		✓			1992	1995	1995
United Arab Emirates	1995				1985	1995		
United Kingdom	1991		✓	1993	1994	1991	1993	1993
United States	1990	Current population, 1996	✓	1987	1994	1990	1993	1995
Uruguay	1996			1990	1993	1965	1987	1987
Uzbekistan	1989	DHS, 1996	✓			1994	1992	1992
Venezuela	1990	LSMS, 1993	✓	1997–98	1993	1970	1992	1992
Vietnam	1989	DHS, 1997		1994		1992	1985	1985
West Bank and Gaza	1997	Demographic, 1995		1971				
Yemen, Rep.	1994	DHS, 1997		1982–85		1990		
Yugoslavia, FR (Serb./Mont.)	1991		✓	1981	1994		1995	1995
Zambia	1990	DHS, 1996		1990	1994	1994		
Zimbabwe	1992	DHS, 1994		1960	1993	1987		

Primary data documentation notes

• **Fiscal year end** is the date of the end of the fiscal year for the central government. Fiscal years for other levels of government and the reporting years for statistical surveys may differ, but if a country is designated as a fiscal year reporter in the following column, the date shown is the end of its national accounts reporting period. • **Reporting period** for national accounts and balance of payments data is designated as either calendar year basis (CY) or fiscal year (FY). Most economies report their national accounts and balance of payments data using calendar years, but some use fiscal years, which straddle two calendar years. In the *World Development Indicators* fiscal year data are assigned to the calendar year that contains the larger share of the fiscal year. If a country's fiscal year ends before June 30, the data are shown in the first year of the fiscal period; if the fiscal year ends on or after June 30, the data are shown in the second year of the period. Saudi Arabia follows a lunar year whose starting and ending dates change with respect to the solar year. Because the International Monetary Fund (IMF) reports most balance of payments data on a calendar year basis, balance of payments data for fiscal year reporters in the *World Development Indicators* are based on fiscal year estimates provided by World Bank staff. These estimates may differ from IMF data but allow consistent comparisons between national accounts and balance of payments data. • **Base year** is the year used as the base period for constant price calculations in the country's national accounts. Price indexes derived from national accounts aggregates, such as the GDP deflator, express the price level relative to prices in the base year. Constant price data reported in the *World Development Indicators* are rescaled to a common 1995 reference year. See *About the data* for table 4.1 for further discussion. • **SNA price valuation** shows whether value added in the national accounts is reported at basic or producers' prices (VAB) or at purchasers' prices (VAP). Purchasers' prices include the value of taxes levied on value added and collected from consumers and thus tend to overstate the actual value added in production. See *About the data* for table 4.2 for further discussion of national accounts valuation. • **Alternative conversion factor** identifies the countries and years for which a World Bank–estimated conversion factor has been used in place of the official (IFS line rf) exchange rate. See *Statistical methods* for further discussion of the use of alternative conversion factors. • **PPP survey year** refers to the latest available survey year for the International Comparison Programme's estimates of purchasing power parities (PPPs). See *About the data* for tables 4.11, 4.12, and 5.6 for further details. • **Balance of Payments Manual in use** refers to the classification system used for compiling and reporting data on balance of payments items in table 4.17. BPM4 refers to the fourth edition of the IMF's *Balance of Payments Manual* (1977), and BPM5 to the fifth edition (1993). Since 1995 the IMF has adjusted all balance of payments data to BPM5 conventions, but some countries continue to report using the older system. • **External debt** shows debt reporting status for 1997 data. *Actual* indicates data are as reported, *preliminary* indicates data are preliminary and include an element of staff estimation, and *estimate* indicates data are staff estimates. • **System of trade** refers to the general trade system (G) or the special trade system (S). For imports under the general trade system, both goods entering directly for domestic consumption and goods entered into customs storage are recorded, at the time of their first arrival, as imports; under the special trade system goods are recorded as imports when declared for domestic consumption whether at time of entry or on withdrawal from customs storage. Exports under the general system comprise outward-moving goods: (a) national goods wholly or partly produced in the country; (b) foreign goods, neither transformed nor declared for domestic consumption in the country, that move outward from customs storage; and (c) nationalized goods that have been declared from domestic consumption and move outward without having been transformed. Under the special system of trade exports comprise categories (a) and (c). In some compilations categories (b) and (c) are classified as re-exports. Direct transit trade, consisting of goods entering or leaving for transport purposes only, is excluded from both import and export statistics. See *About the data* for tables 4.5 and 4.6 for further discussion. • **Government finance accounting concept** describes the accounting basis for reporting central government financial data. For most countries government finance data have been consolidated (C) into one set of accounts capturing all the central government's fiscal activities. Budgetary central government accounts (B) exclude central government units. See *About the data* for table 4.13 for further details. • **IMF special data dissemination** shows the countries that subscribe to the International Monetary Fund's (IMF) Special Data Dissemination Standard (SDDS). *S* refers to countries that subscribe; *S** indicates subscribers that have posted data on the Internet. (Posted data can be reached through the IMF Dissemination Standard Bulletin Board at http://dsbb.imf.org/). The IMF established the SDDS to guide members that have or are seeking access to international capital markets in providing economic and financial data to the public. The SDDS is expected to enhance the availability of timely and comprehensive data and therefore to contribute to the pursuit of sound macroeconomic policies; it is also expected to contribute to the improved functioning of financial markets. Although subscription is voluntary, it commits the subscriber to observing the standard and to providing information to the IMF about its practices in disseminating economic and financial data. • **Latest population census** shows the most recent year in which a census was conducted. • **Latest household or demographic survey** gives information on the surveys used in compiling household and demographic data presented in section 2. PAPCHILD is the Pan Arab Project for Child Development, DHS is Demographic and Health Survey, WFS is World Fertility Study, LSMS is Living Standards Measurement Study, SDA is Social Dimensions of Adjustment, CDC is Centers for Disease Control and Prevention, and SHEHEA is Survey of Household Expenditure and Household Economic Activities. • **Vital registration complete** identifies countries judged to have complete registries of vital (birth and death) statistics by the United Nations Department of Economic and Social Information and Policy Analysis, Statistical Division, and reported in *Population and Vital Statistics Reports*. Countries with complete vital statistics registries may have more accurate and more timely demographic indicators. • **Latest agricultural census** shows the most recent year in which an agricultural census was conducted and reported to the Food and Agriculture Organization. • **Latest industrial data** refer to the most recent year for which manufacturing value added data at the three-digit level of the International Standard Industrial Classification (revision 2 or 3) are available in the UNIDO database. • **Latest water withdrawal data** refer to the most recent year for which data have been compiled from a variety of sources. See *About the data* for table 3.5 for more information. • **Latest surveys of scientists and engineers engaged in R&D** and **expenditure for R&D** refer to the most recent year for which data are available from a data collection effort by UNESCO in science and technology and research and development (R&D). See *About the data* for table 5.12 for more information.

Acronyms and abbreviations

Technical terms

BOD	biochemical oxygen demand
btu	British thermal units
CFC	chlorofluorocarbon
c.i.f.	cost, insurance, and freight
CO_2	carbon dioxide
CPI	consumer price index
cu. m	cubic meter
DHS	demographic and health survey
DMTU	dry metric ton unit
DPT	diphtheria, pertussis, and tetanus
ESAF	Enhanced Structural Adjustment Facility
FDI	foreign direct investment
f.o.b.	free on board
FYR	former Yugoslav Republic
GDP	gross domestic product
GEMS	Gobal Environment Monitoring System
GIS	geographic information system
GNI	gross national income
GNP	gross national product
ha	hectare
HIC	high-income countries
HIV	human immunodeficiency virus
ICD	international classification of diseases
ICRG	International Country Risk Guide
ICSE	International Classification of Status in Employment
IMR	infant mortality rate
ISCED	International Standard Classification of Education
ISIC	International Standard Industrial Classification
kg	kilogram
km	kilometer
kwh	kilowatt-hour
LIBOR	London interbank offered rate
M0	currency and coins (monetary base)
M1	narrow money (currency and demand deposits)
M2	money plus quasi money
M3	broad money or liquid liabilities
MFA	Multifibre Arrangement
mmbtu	millions of British thermal units
mt	metric ton
MUV	manufactures unit value
NEAP	national environmental action plan
NGO	nongovernmental organization
NTBs	nontariff barriers
ODA	official development assistance
PC	personal computer
PPP	purchasing power parity
R&D	research and development
SAF	Structural Adjustment Facility
SDR	special drawing right
SITC	Standard International Trade Classification
SNA	U.N. System of National Accounts
SOPEMI	Continuous Reporting System on Migration
SO_2	Sulfur dioxide
sq. km	square kilometer
STD	sexually transmitted disease
TB	tuberculosis
TFP	total factor productivity
ton-km	metric ton-kilometers
TSP	total suspended particulates
UN5MR	child (under-5) mortality rate

Organizations

ACDA	Arms Control and Disarmament Agency
ADB	Asian Development Bank
AfDB	African Development Bank
APEC	Asia-Pacific Economic Cooperation
CDC	Centers for Disease Control and Prevention
CDIAC	Carbon Dioxide Information Analysis Center
CEC	Commission of the European Community
DAC	Development Assistance Committee
EBRD	European Bank for Reconstruction and Development
EDF	European Development Fund
EFTA	European Free Trade Area
EIB	European Investment Bank
EMU	European Monetary Union
EU	European Union
EUROSTAT	Statistical Office of the European Community
FAO	Food and Agriculture Organization
G-5	France, Germany, Japan, United Kingdom, and United States
G-7	G-5 plus Canada and Italy
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
IBRD	International Bank for Reconstruction and Development
ICAO	International Civil Aviation Organisation
ICCO	International Cocoa Organization
ICO	International Coffee Organization
ICP	International Comparison Programme
ICSE	International Classification of Status in Employment
IDA	International Development Association
IDB	Inter-American Development Bank
IEA	International Energy Agency
IFAC	International Federation of Accountants
IFC	International Finance Corporation
IFCI	International Finance Corporation Investable
ILO	International Labour Organisation
IMF	International Monetary Fund
IRF	International Road Federation
ITU	International Telecommunication Union
IUCN	World Conservation Union
LME	London Metals Exchange
MIGA	Multilateral Investment Guarantee Agency
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organization
OECD	Organisation for Economic Co-operation and Development
PAHO	Pan American Health Organization
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCED	United Nations Conference on Environment and Development
UNCHS	United Nations Center for Human Settlements
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNRISD	United Nations Research Institute for Social Development
UNSD	United Nations Statistical Division
USAID	U.S. Agency for International Development
WCMC	World Conservation Monitoring Centre
WFP	World Food Programme
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WRI	World Resources Institute
WTO	World Trade Organization
WWF	World Wide Fund for Nature

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Bibliography

ACDA (Arms Control and Disarmament Agency). 1997. *World Military Expenditures and Arms Transfers 1996.* Washington, D.C.

Ahmad, Sultan. 1992. "Regression Estimates of Per Capita GDP Based on Purchasing Power Parities." Policy Research Working Paper 956. World Bank, International Economics Department, Washington, D.C.

———. 1994. "Improving Inter-Spatial and Inter-Temporal Comparability of National Accounts." *Journal of Development Economics* 44:53–75.

Ahuja, Vinod, Benu Bidani, Francisco Ferrera, and Michael Walton. 1997. *Everyone's Miracle: Revisiting Poverty and Inequality in East Asia.* A Directions in Development book. Washington, D.C.: World Bank.

American Automobile Manufacturers Association. 1997. *World Motor Vehicle Data.* Detroit, Mich.

Anker, Richard. 1998. *Gender and Jobs: Sex Segregation of Occupations in the World.* Geneva: International Labour Office.

Armington, Paul, and Yuri Dikhanov. 1996. "Multivariate Normalization of Infrastructure (e.g. Roads) for Comparative Purposes." World Bank, International Economics Department, Washington, D.C.

Asian Development Bank. 1995. "Governance: Sound Development Management." 12151-95. 17 August. Washington, D.C.

Azariadis, Costas, and Allen Drazen. 1990. "Threshold Externalities in Economic Development." *Quarterly Journal of Economics* 105(2):501–26.

Ball, Nicole. 1984. "Measuring Third World Security Expenditure: A Research Note." *World Development* 12(2):157–64.

Barro, Robert J. 1991. "Economic Growth in a Cross-Section of Countries." *Quarterly Journal of Economics* 106(2):407–44.

Becker, Gary. 1964. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.* General Series 30. New York: Columbia University Press.

Behrman, Jere R., and Mark R. Rosenzweig. 1994. "Caveat Emptor: Cross-Country Data on Education and the Labor Force." *Journal of Development Economics* 44:147–71.

Bhattasali, Deepak. 1998. "Economic Outcomes and Policies in Sub-Saharan Africa." World Bank, Africa Region, Economic Management and Social Policy Unit, Washington, D.C.

Bos, Eduard, My T. Vu, Ernest Massiah, and Rodolfo Bulatao. 1994. *World Population Projections 1994–95.* Baltimore, Md.: Johns Hopkins University Press.

Bourguignon, François, and Christian Morrison. 1992. *Adjustment and Equity in Developing Countries.* Development Centre Study. Paris: Organisation for Economic Co-operation and Development.

Braga, C.A. Primo, and Alexander Yeats. 1992. "How Minilateral Trading Arrangements May Affect the Post–Uruguay Round World." World Bank, International Economics Department, Washington, D.C.

Brown, Lester R., Christopher Flavin, Hilary F. French, and others. 1998. *State of the World 1998.* Washington, D.C.: Worldwatch Institute.

Brown, Lester R., Michael Renner, Christopher Flavin, and others. 1998. *Vital Signs 1998.* Washington, D.C.: Worldwatch Institute.

Bulatao, Rodolfo A. 1998. *The Value of Family Planning Programs in Developing Countries.* Santa Monica, Calif.: RAND.

Caiola, Marcello. 1995. *A Manual for Country Economists.* Training Series 1, vol. 1. Washington, D.C.: International Monetary Fund.

Caprio, Gerard, Jr., and Daniela Klingebiel. 1997. "Bank Insolvency: Bad Luck, Bad Policy, or Bad Banking?" In Michael Bruno and Boris Pleskovic, eds., *Proceedings of the Annual World Bank Conference on Development Economics 1996.* Washington, D.C.: World Bank.

Cassen, Robert, and associates. 1986. *Does Aid Work? Report to Intergovernmental Task Force on Concessional Flows.* Oxford: Clarendon Press.

Centro Latinoamericano de Demografía. Various years. *Boletín Demográfico.* Santiago, Chile.

Chamie, Joseph. 1994. "Demography: Population Databases in Development Analysis." *Journal of Development Economics* 44:131–46.

Chellaraj, Gnanaraj, Olusoji Adeyi, Alexander S. Preker, and Ellen Goldstein. 1996. *Trends in Health Status, Services, and Finance: The Transition in Central and Eastern Europe.* Vol. 2. World Bank Technical Paper 348. Washington, D.C.

Coale, A.J., and P. Demeny. 1983. *Regional Model Life Tables and Stable Populations.* Princeton, N.J.: Princeton University Press.

Conly, Shanti R., and Joanne E. Epp. 1997. *Falling Short: The World Bank's Role in Population and Reproductive Health.* Washington, D.C.: Population Action International.

Council of Europe. Various years. *Recent Demographic Developments in Europe and North America.* Strasbourg: Council of Europe Press.

Currency Data & Intelligence, Inc. Various issues. *Global Currency Report.* Brooklyn, N.Y.

Dasgupta, Partha. 1993. *An Inquiry into Well-Being and Destitution.* Oxford: Clarendon Press.

Dasgupta, Partha, and Martin Weale. 1992. "On Measuring the Quality of Life." *World Development* 20:119–31.

Davis, Lester. 1982. *Technology Intensity of U.S. Output and Trade.* Washington, D.C.: U.S. Department of Commerce.

Demery, Lionel, and Michael Walton. 1997. "Are Poverty and Social Targets for the 21st Century Attainable?" Paper presented at a Development Assistance Committee–Development Centre seminar, Organisation for Economic Co-operation and Development, 4–5 December, Paris.

Demirgüç-Kunt, Asli, and Enrica Detragiache. 1997. "The Determinants of Banking Crises: Evidence from Developed and Developing Countries." Working paper. World Bank and International Monetary Fund, Washington, D.C.

Demirgüç-Kunt, Asli, and Ross Levine. 1996a. "Stock Markets, Corporate Finance, and Economic Growth: An Overview." *The World Bank Economic Review* 10(2):223–39.

———. 1996b. "Stock Market Development and Financial Intermediaries: Stylized Facts." *The World Bank Economic Review* 10(2):291–321.

Dixon, John, and Paul Sherman. 1990. *Economics of Protected Areas: A New Look at Benefits and Costs.* Washington, D.C.: Island Press.

DKT International. 1998. *1997 Contraceptive Social Marketing Statistics.* Washington, D.C.

Drucker, Peter F. 1994. "The Age of Social Transformation." *Atlantic Monthly* 274 (November).

Edwards, Sebastian. 1995. *Crisis and Reform in Latin America: From Despair to Hope.* New York: Oxford University Press.

Euromoney. 1998. September. London.

Eurostat (Statistical Office of the European Communities). Various years. *Demographic Statistics.* Luxembourg.

———. Various years. *Statistical Yearbook.* Luxembourg.

Evenson, Robert E., and Carl E. Pray. 1994. "Measuring Food Production (with reference to

South Asia)." *Journal of Development Economics* 44:173–97.

Faiz, Asif, Christopher S. Weaver, and Michael P. Walsh. 1996. *Air Pollution from Motor Vehicles: Standards and Technologies for Controlling Emissions.* Washington, D.C.: World Bank.

Fallon, Peter, and Zafiris Tzannatos. 1998. *Child Labor: Issues and Directions for the World Bank.* Washington, D.C.: World Bank.

Fankhauser, Samuel. 1995. *Valuing Climate Change: The Economics of the Greenhouse.* London: Earthscan.

FAO (Food and Agriculture Organization). 1986. "Inter-Country Comparisons of Agricultural Production Aggregates." Economic and Social Development Paper 61. Rome.

———. 1990. "Tobacco: Supply, Demand and Trade Projections, 1995 and 2000." Economic and Social Development Paper 86. Rome.

———. 1996. *Food Aid in Figures 1994.* Vol. 12. Rome.

———. 1997. *State of the World's Forests 1997.* Rome.

———. Various years. *Fertilizer Yearbook.* FAO Statistics Series. Rome.

———. Various years. *Production Yearbook.* FAO Statistics Series. Rome.

———. Various years. *Trade Yearbook.* FAO Statistics Series. Rome.

Feldstein, Martin, and Charles Horioka. 1980. "Domestic Savings and International Capital Flows." *Economic Journal* 90(358):314–29.

Filmer, Dean, and Lant Pritchett. 1998. "The Effect of Household Wealth on Educational Attainment: Demographic and Health Survey Evidence." Policy Research Working Paper 1980. World Bank, Development Research Group, Washington, D.C.

Filmer, Dean, Elizabeth King, and Lant Pritchett. 1998. "Gender Disparity in South Asia." Policy Research Working Paper 1867. World Bank, Development Research Group, Washington, D.C.

Finger, J. Michael, Merlinda Ingco, and Ulrich Reincke. 1996. *The Uruguay Round: Statistics on Tariff Concessions Given and Received.* Washington, D.C.: World Bank.

Fischer, Stanley. 1993. "The Role of Macroeconomic Factors in Growth." *Journal of Monetary Economics* 32:485–512.

Fox, James W. 1995. "What Do We Know about World Poverty?" USAID Evaluation Special Study 74. U.S. Agency for International Development, Center for Development Information and Evaluation, Washington, D.C.

Frankel, Jeffrey. 1993. "Quantifying International Capital Mobility in the 1990s." In Jeffrey Frankel, ed., *On Exchange Rates.* Cambridge, Mass.: MIT Press.

Frankel, Jeffrey, and Andrew K. Rose. 1996. "Currency Crashes in Emerging Markets: An Empirical Treatment." *Journal of International Economics* 41:351–66.

Fredricksen, Birger. 1993. *Statistics of Education in Developing Countries: An Introduction to Their Collection and Analysis.* Paris: UNESCO.

Freedom House. 1998. *Freedom in the World 1997/1998.* New Brunswick, N.J., and London: Transaction Publishers.

French, Kenneth, and James M. Poterba. 1991. "Investor Diversification and International Equity Markets." *American Economic Review* 81: 222–26.

Furstenberg, George Von. 1997. "Where to Look for International Financial Integration? A Review Essay." Paper presented at an International Monetary Fund Research Department seminar, 29 July, Washington, D.C.

Gannon, Colin, and Zmarak Shalizi. 1995. "The Use of Sectoral and Project Performance Indicators in Bank-Financed Transport Operations." TWU Discussion Paper 21. World Bank, Transportation, Water, and Urban Development Department, Washington, D.C.

Gardner-Outlaw, T., and R. Engelman. 1997. "Sustaining Water, Easing Scarcity: A Second Update." Population Action International, Washington, D.C.

GATT (General Agreement on Tariffs and Trade). 1966. *International Trade 1965.* Geneva.

———. 1989. *International Trade 1988–89.* Geneva.

Goldfinger, Charles. 1994. *L'utile et le futile: L'économie de l'immatériel.* Paris: Editions Odile Jacob.

Goldstein, Ellen, Alexander S. Preker, Olusoji Adeyi, and Gnanaraj Chellaraj. 1996. *Trends in Health Status, Services, and Finance: The Transition in Central and Eastern Europe.* Vol. 1. World Bank Technical Paper 341. Washington, D.C.

Gray, Cheryl W., and Daniel Kaufmann. 1998. "Corruption and Development." *Finance & Development* 35(1):7–10.

Greaney, Vincent, and Thomas Kellaghan. 1996. *Monitoring the Learning Outcomes of Education Systems.* A Directions in Development book. Washington, D.C.: World Bank.

Haggarty, Luke, and Mary M. Shirley. 1997. "A New Data Base on State-Owned Enterprises." *The World Bank Economic Review* 11(3):491–513.

Happe, Nancy, and John Wakeman-Linn. 1994. "Military Expenditures and Arms Trade: Alternative Data Sources." IMF Working Paper 94/69. International Monetary Fund, Policy Development and Review Department, Washington, D.C.

Harbison, Ralph W., and Eric A. Hanushek. 1992. *Educational Performance of the Poor: Lessons from Rural Northeast Brazil.* New York: Oxford University Press.

Harrison, Ann, and Ana Revenga. 1995a. "The Effects of Trade Policy Reform: What Do We Really Know?" NBER Working Paper 5225. National Bureau of Economic Research, Cambridge, Mass.

———. 1995b. "Factor Markets and Trade Policy Reform." World Bank, Washington, D.C.

Hatter, Victoria L. 1985. *U.S. High-Technology Trade and Competitiveness.* Washington, D.C.: U.S. Department of Commerce.

Heck, W.W. 1989. "Assessment of Crop Losses from Air Pollutants in the U.S." In J.J. McKenzie and M.T. El Ashry, eds., *Air Pollution's Toll on Forests and Crops.* New Haven, Conn.: Yale University Press.

Heritage Foundation and the Wall Street Journal. 1999. *1999 Index of Economic Freedom.* Edited by Bryan T. Johnson, Kim R. Holmes, and Melanie Kirkpatrick. Washington, D.C., and New York.

Heston, Alan. 1994. "A Brief Review of Some Problems in Using National Accounts Data in Level of Output Comparisons and Growth Studies." *Journal of Development Economics* 44:29–52.

Hettige, Hemamala, Muthukumara Mani, and David Wheeler. 1998. "Industrial Pollution in Economic Development: Kuznets Revisited." Policy Research Working Paper 1876. World Bank, Development Research Group, Washington, D.C.

Heyneman, Stephen P. 1996. "The Quality of Education in the Middle East and North Africa." EMT Working Paper 3. World Bank, Europe and Central Asia and Middle East and North Africa Technical Department, Washington, D.C.

Hill, M. Anne, and Elizabeth M. King. 1993. "Women's Education in Developing Countries: An Overview." In Elizabeth M. King and M. Anne Hill, eds., *Women's Education in Developing*

Countries. Baltimore, Md.: Johns Hopkins University Press.

ICAO (International Civil Aviation Organization). 1998. *Civil Aviation Statistics of the World: 1997.* ICAO Statistical Yearbook. 22d ed. Montreal.

IEA (International Energy Agency). Various years. *Energy Balances of OECD Countries.* Paris.

———. Various years. *Energy Statistics and Balances of Non-OECD Countries.* Paris.

———. Various years. *Energy Statistics of OECD Countries.* Paris.

IFAC (International Federation of Accountants). 1998. *Guideline for Governmental Financial Reporting.* Exposure draft. Public Sector Committee. New York.

IFC (International Finance Corporation). 1997. *Trends in Private Investment in Developing Countries 1997.* Washington, D.C.

———. 1998. *Emerging Stock Markets Factbook 1998.* Washington, D.C.

ILO (International Labour Organisation). 1990a. *ILO Manual on Concepts and Methods.* Geneva: International Labour Office.

———. 1990b. *Yearbook of Labour Statistics: Retrospective Edition of Population Censuses 1945–89.* Geneva: International Labour Office.

———. Various years. *Sources and Methods: Labour Statistics.* (Formerly *Statistical Sources and Methods.*) Geneva: International Labour Office.

———. Various years. *Yearbook of Labour Statistics.* Geneva: International Labour Office.

IMF (International Monetary Fund). 1977. *Balance of Payments Manual.* 4th ed. Washington, D.C.

———. 1986. *A Manual on Government Finance Statistics.* Washington, D.C.

———. 1993. *Balance of Payments Manual.* 5th ed. Washington, D.C.

———. 1995. *Balance of Payments Compilation Guide.* Washington, D.C.

———. 1996a. *Balance of Payments Textbook.* Washington, D.C.

———. 1996b. *Manual on Monetary and Financial Statistics.* Washington, D.C.

———. 1997a. *Good Governance: The IMF's Role.* Washington, D.C.

———. 1997b. *Why Worry about Corruption?* Washington, D.C.

———. 1998a. *Code of Good Practices on Fiscal Transparency—Declaration on Principles.* Adopted by the Interim Committee of the Board of Governors of the IMF, 16 April. Washington, D.C.

———. 1998b. *Exchange Arrangements and Exchange Restrictions Annual Report, 1998.* Washington, D.C.

———. Various years. *Balance of Payments Statistics Yearbook.* Parts 1 and 2. Washington, D.C.

———. Various issues. *Direction of Trade Statistics.* Quarterly. Washington, D.C.

———. Various years. *Direction of Trade Statistics Yearbook.* Washington, D.C.

———. Various years. *Government Finance Statistics Yearbook.* Washington, D.C.

———. Various issues. *International Financial Statistics.* Monthly. Washington, D.C.

———. Various years. *International Financial Statistics Yearbook.* Washington, D.C.

Intergovernmental Panel on Climate Change. 1996. *Climate Change 1995.* Cambridge: Cambridge University Press.

International Association for the Evaluation of Educational Achievement. 1997. *Third International Mathematics and Science Study, 1994–95.* Boston, Mass.: Boston College, TIMSS International Study Center.

International Chamber of Commerce. 1996. *Extortion and Bribery in International Business Transactions—Rules and Recommendations.* Paris.

International Telecommunication Union. 1998. *World Telecommunication Development Report.* Geneva.

International Working Group of External Debt Compilers (Bank for International Settlements, International Monetary Fund, Organisation for Economic Co-operation and Development, and World Bank). 1987. *External Debt Definitions.* Washington, D.C.

Inter-Secretariat Working Group on National Accounts (Commission of the European Community, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank). 1993. *System of National Accounts.* Brussels, Luxembourg, New York, and Washington, D.C.

IRF (International Road Federation). 1998. *World Road Statistics 1998.* Geneva.

Irwin, Douglas A. 1996. "The United States in a New Global Economy? A Century's Perspective." Papers and Proceedings of the 108th Annual Meeting of the American Economic Association. *American Economic Review* (May).

Isard, Peter. 1995. *Exchange Rate Economics.* Cambridge: Cambridge University Press.

IUCN (World Conservation Union). 1996. *1996 IUCN Red List of Threatened Animals.* Gland, Switzerland.

———. 1998. *1997 IUCN Red List of Threatened Plants.* Gland, Switzerland.

Journal of Development Economics. 1994. Special issue on database for development analysis. Edited by T.N. Srinivasan. Vol. 44, no. 1.

Kaminsky, Graciela L., and Carmen M. Reinhart. 1997. "The Twin Crises: The Causes of Banking and Balance-of-Payments Problems." Working Paper in International Economics 37. University of Maryland, College Park.

Kaminsky, Graciela L., Saul Lizondo, and Carmen M. Reinhart. 1997. "Leading Indicators of Currency Crises." Policy Research Working Paper 1852. World Bank, Latin America and the Caribbean Region, Office of the Chief Economist, Washington, D.C.

Kanbur, Ravi. 1997. "Income Distribution and Development." Cornell University, Ithaca, N.Y.

Kaufmann, Daniel. 1998. "Challenges in the Next Stage of Anti-Corruption." In Transparency International and World Bank, Economic Development Institute, *New Perspectives on Combating Corruption.* Washington, D.C.

Kaufmann, Daniel, Sanjay Pradhan, and Randi Ryterman with James Anderson. 1998. "New Frontiers in Diagnosing and Combating Corruption." PREM Note 7. World Bank, Development Economics Vice Presidency and Poverty Reduction and Economic Management Network, Washington, D.C.

Klugman, Jeni, and George Schieber. 1996. *A Survey of Health Reform in Central Asia.* World Bank Technical Paper 344. Washington, D.C.

Knetter, Michael. 1994. "Why Are Retail Prices in Japan So High? Evidence from German Export Prices." NBER Working Paper 4894. National Bureau of Economic Research, Cambridge, Mass.

Kravis, Irving B. 1970. "Trade as a Handmaiden of Growth." *Economic Journal* 80(323):850–72.

Krueger, Anne O., Constantine Michalopoulos, and Vernon W. Ruttan. 1989. *Aid and Development.* Baltimore, Md.: Johns Hopkins University Press.

Krugman, Paul. 1991. *Geography and Trade.* Cambridge, Mass.: MIT Press.

Kunte, Arundhati, Kirk Hamilton, John Dixon, and Michael Clemens. 1998. "Estimating National Wealth: Methodology and Results." Environmental

Economics Series, no. 57. World Bank, Environment Department, Washington, D.C.

Leamer, Edward. 1987. "Measures of Openness." Working Paper 447. University of California at Los Angeles, Department of Economics.

Levine, Ross, and Sara Zervos. 1996. "Stock Market Development and Long-Run Growth." *The World Bank Economic Review* 10(2):323–40.

Lewis, Karen K. 1995. "Puzzles in International Financial Markets." In Gene Grossman and Kenneth Rogoff, eds., *Handbook of International Economics*. Vol. 3. Amsterdam: North Holland.

Lewis, Stephen R., Jr. 1989. "Primary Exporting Countries." In Hollis Chenery and T.N. Srinivasan, eds., *Handbook of Development Economics*. Vol. 2. Amsterdam: North Holland.

Lockheed, Marlaine E., Adriaan M. Verspoor, and associates. 1991. *Improving Primary Education in Developing Countries*. New York: Oxford University Press.

Lovei, Magdolna. 1997. "Toward Effective Pollution Management." *Environment Matters* (fall): 52–53.

Low, Patrick, and Alexander Yeats. 1994. "Nontariff Measures and Developing Countries: Has the Uruguay Round Leveled the Playing Field?" Policy Research Working Paper 1353. World Bank, International Economics Department, Washington, D.C.

Lucas, R.E. 1988. "On the Mechanics of Economic Development." *Journal of Monetary Economics* 22:3–22.

Lustig, Nora, ed. 1995. *Coping with Austerity: Poverty and Inequality in Latin America*. Washington, D.C.: The Brookings Institution.

Mani, Muthukumara, and David Wheeler. 1997. "In Search of Pollution Havens? Dirty Industry in the World Economy, 1960–95." World Bank, Policy Research Department, Washington, D.C.

Midgley, Peter. 1994. *Urban Transport in Asia: An Operational Agenda for the 1990s*. World Bank Technical Paper 224. Washington, D.C.

Milanovic, Branko. 1998. *Income, Inequality, and Poverty during the Transition from Planned to Market Economy*. A World Bank Regional and Sectoral Study. Washington, D.C.

Moody's Investors Service. 1998. *Sovereign, Subnational and Sovereign-Guaranteed Issuers*. December. New York.

Morgenstern, Oskar. 1963. *On the Accuracy of Economic Observations*. Princeton, N.J.: Princeton University Press.

Murray, Christopher, Ramesh Govindaraj, and Gnanaraj Chellaraj. 1994. "Global Domestic Expenditures in Health." Background paper 13 to *World Development Report 1993*. World Bank, Washington, D.C.

Obstfeldt, Maurice. 1995. "International Capital Mobility in the 1990s." In P.B. Kenen, ed., *Understanding Interdependence: The Macroeconomics of the Open Economy*. Princeton, N.J.: Princeton University Press.

Obstfeldt, Maurice, and Kenneth Rogoff. 1996. *Foundations of International Macroeconomics*. Cambridge, Mass.: MIT Press.

OECD (Organisation for Economic Co-operation and Development). 1985. "Measuring Health Care 1960–1983: Expenditure, Costs, Performance." OECD Social Policy Studies 2. Paris.

———. 1989. "Health Care Expenditure and Other Data: An International Compendium from the OECD." In *Health Care Financing Review*. Annual supplement. Paris.

———. 1995. *DAC Orientations on Participatory Development and Good Governance*. Development Co-operation Guidelines Series. Paris.

———. 1996a. *Development Assistance: Efforts and Policies of the Members of the Development Assistance Committee*. Paris.

———. 1996b. *Education at a Glance*. Paris.

———. 1996c. *Shaping the 21st Century: The Contribution of Development Cooperation*. Paris.

———. 1997a. "DAC Guidelines on Conflict, Peace and Development Co-operation." Development Assistance Committee. Paris.

———. 1997b. *Employment Outlook*. Paris.

———. 1997c. *OECD Environmental Data: Compendium 1997*. Paris.

———. 1997d. *Trends in International Migration: Continuous Reporting System on Migration, 1997*. Paris.

———. 1998. *Trends in International Migration: Continuous Reporting System on Migration, 1998*. Paris.

———. Various years. *Development Co-operation*. Paris.

———. Various years. *Geographical Distribution of Financial Flows to Aid Recipients: Disbursements, Commitments, Country Indicators*. Paris.

———. Various issues. *Main Economic Indicators*. Monthly. Paris.

———. Various years. *National Accounts*. Vol. 1, *Main Aggregates*. Paris.

———. Various years. *National Accounts*. Vol. 2, *Detailed Tables*. Paris.

Papageorgiou, Demetris, Armeane Choksi, and Michael Michaely. 1990. "Liberalizing Foreign Trade in Developing Countries: The Lessons of Experience." World Bank, Washington, D.C.

Pearce, David, and Giles Atkinson. 1993. "Capital Theory and the Measurement of Sustainable Development: An Indicator of Weak Sustainability." *Ecological Economics* 8:103–08.

PricewaterhouseCoopers. 1998a. *Corporate Taxes: A Worldwide Summary*. New York.

———. 1998b. *Individual Taxes: A Worldwide Summary*. New York.

Pritchett, Lant. 1996. "Measuring Outward Orientation in Developing Countries: Can It Be Done?" Policy Research Working Paper 566. World Bank, Country Economics Department, Washington, D.C.

Pritchett, Lant, and Geeta Sethi. 1994. "Tariff Rates, Tariff Revenue, and Tariff Reform—Some New Facts." *The World Bank Economic Review* 8(1):1–16.

PRS Group. 1998. *International Country Risk Guide*. December. East Syracuse, N.Y.

Psacharopoulos, George. 1994. "Returns to Investment in Education: A Global Update." *World Development* 22(9):1325–43.

———. 1995. *Building Human Capital for Better Lives*. Washington, D.C.: World Bank.

Psacharopoulos, George, and Zafiris Tzannatos. 1992. *Case Studies on Women's Employment and Pay in Latin America*. A World Bank Regional and Sectoral Study. Washington, D.C.

Rama, Martin, and Raquel Artecona. Forthcoming. "A Database of Labor Market Indicators across Countries." Policy Research Working Paper. World Bank, Washington, D.C.

Ravallion, Martin. 1996. "Poverty and Growth: Lessons from 40 Years of Data on India's Poor." DECNote 20. World Bank, Development Economics Vice Presidency, Washington, D.C.

Ravallion, Martin, and Shaohua Chen. 1996. "What Can New Survey Data Tell Us about the Recent Changes in Living Standards in Developing and Transitional Economies?" World Bank, Policy Research Department, Washington, D.C.

———. 1997. "Can High-Inequality Developing Countries Escape Absolute Poverty?" *Economic Letters* 56:51–57.

———. Forthcoming. "What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty?" *The World Bank Economic Review.*

Rodrik, Dani. Forthcoming. "Who Needs Capital Convertibility?" *Princeton Essays in International Finance.*

Rogoff, Kenneth. 1996. "The Purchasing Power Parity Puzzle." *Journal of Economic Literature* 34:647–68.

Romer, P.M. 1986. "Increasing Returns and Long-Run Growth." *Journal of Political Economy* 94:1002–37.

Ruggles, Robert. 1994. "Issues Relating to the UN System of National Accounts and Developing Countries." *Journal of Development Economics* 44(1):87–102.

Ryten, Jacob. 1998. "Fifty Years of ISIC: Historical Origins and Future Perspectives." United Nations Department of Economic and Social Affairs, Statistics Division, New York. ECA/STAT.AC.63/22.

Schultz, T. Paul. 1993. "Returns to Women's Education." In Elizabeth M. King and M. Anne Hill, eds., *Women's Education in Developing Countries.* Baltimore, Md.: Johns Hopkins University Press.

Schultz, Theodore W. 1961. "Education and Economic Growth." In N.B. Henry, ed., *Social Forces Influencing American Education.* Chicago: University of Chicago Press.

Sen, Amartya. 1988. "The Concept of Development." In Hollis Chenery and T.N. Srinivasan, eds., *Handbook of Development Economics.* Vol. 1. Amsterdam: North Holland.

Serageldin, Ismail. 1995. *Toward Sustainable Management of Water Resources.* A Directions in Development book. Washington D.C.: World Bank.

Shapiro, Harvey. 1998. "A High-Level Stall." *Institutional Investor* 23(September):9.

Shiklovanov, Igor. 1993. "World Fresh Water Resources." In Peter H. Gleick, ed., *Water in Crisis: A Guide to Fresh Water Resources.* New York: Oxford University Press.

South Pacific Commission. 1997. *Pacific Island Populations Data Sheet.* Noumea, New Caledonia.

Srinivasan, T.N. 1991. "Development Thought, Policy, and Strategy, Then and Now." Background paper to *World Development Report 1991.* World Bank, Washington, D.C.

———. 1994. "Database for Development Analysis: An Overview." *Journal of Development Economics* 44(1):3–28.

Standard & Poor's. 1998. *Credit Week.* December. New York.

Standard & Poor's DRI. 1998. *Global Risk Service.* Lexington, Mass.

Stephenson, Sherry M. 1996. "Standards and Conformity Assessments as Nontariff Barriers to Trade." Policy Research Working Paper 1826. World Bank, Development Research Group, Washington, D.C.

Swanson, Eric V. 1988. *Achievement and Wastage: The Retention of Literacy and Numeracy Skills in Primary School.* Ph.D. dissertation. State University of New York at Buffalo, Economics Department. Ann Arbor, Mich.: University Microfilms.

Syrquin, Moshe. 1988. "Patterns of Structural Change." In Hollis Chenery and T.N. Srinivasan, eds., *Handbook of Development Economics.* Vol. 1. Amsterdam: North Holland.

Taylor, Alan M. 1996a. "International Capital Mobility in History: Purchasing Power Parity in the Long Run." NBER Working Paper 5742. National Bureau of Economic Research, Cambridge, Mass.

———. 1996b. "International Capital Mobility in History: The Saving-Investment Relationship." NBER Working Paper 5743. National Bureau of Economic Research, Cambridge, Mass.

TeleGeography and International Telecommunication Union. 1997. *Direction of Traffic 1996.* Washington, D.C.

Transparency International and World Bank, Economic Development Institute. 1998. *New Perspectives on Combating Corruption.* Washington, D.C.

UNAIDS and WHO (World Health Organization). 1998. *Report on the Global HIV/AIDS Epidemic.* Geneva.

UNCTAD (United Nations Conference on Trade and Development). Various years. *Handbook of International Trade and Development Statistics.* Geneva.

UNEP (United Nations Environment Programme). 1991. *Urban Air Pollution.* Nairobi.

UNEP (United Nations Environment Programme) and WHO (World Health Organization). 1992. *Urban Air Pollution in Megacities of the World.* Cambridge, Mass.: Blackwell.

———. 1995. *City Air Quality Trends.* Nairobi.

UNESCO (United Nations Educational, Scientific, and Cultural Organization). 1998a. *Statistical Yearbook.* Paris: UNESCO Publishing and Bernan Press.

———. 1998b. *World Education Report.* Paris: UNESCO Publishing and Bernan Press.

UNICEF (United Nations Children's Fund). Various years. *The Progress of Nations.* New York: Oxford University Press.

———. Various years. *The State of the World's Children.* New York: Oxford University Press.

UNIDO (United Nations Industrial Development Organization). 1996. *International Yearbook of Industrial Statistics 1997.* Vienna.

United Nations. 1947. *Measurement of National Income and the Construction of Social Accounts.* New York.

———. 1968. *A System of National Accounts: Studies and Methods.* Series F, no. 2, rev. 3. New York.

———. 1985. *National Accounts Statistics: Compendium of Income Distribution Statistics.* New York.

———. 1990a. *Assessing the Nutritional Status of Young Children.* National Household Survey Capability Programme. New York.

———. 1990b. *International Standard Industrial Classification of All Economic Activities, Third Revision.* Statistical Papers Series M, no. 4, rev. 3. New York.

———. 1991. *The World's Women, 1970–90: Trends and Statistics.* New York.

———. 1993a. *Integrated Environmental and Economic Accounting.* New York.

———. 1993b. *International Trade Statistics Yearbook.* Vol. 1. New York.

———. 1993c. *Report on the World Social Situation, 1993.* New York.

———. 1997. *World Urbanization Prospects: The 1996 Revision.* New York.

———. Various years. *Energy Statistics Yearbook.* New York.

———. Various years. *International Trade Statistics Yearbook.* New York.

———. Various issues. *Monthly Bulletin of Statistics.* New York.

———. Various years. *National Accounts Statistics: Main Aggregates and Detailed Tables.* Parts 1 and 2. New York.

———. Various years. *National Income Accounts.* Statistics Division. New York.

———. Various years. *Statistical Yearbook.* New York.

———. Various years. *Update on the Nutrition Situation.* Administrative Committee on Coordination, Subcommittee on Nutrition. Geneva.

United Nations Department of Economic and Social Affairs. 1996. *International Migration Policies 1995.* New York.

———. 1998. *World Population Prospects: The 1998 Revision.* New York.

———. Various years. *Levels and Trends of Contraceptive Use.* New York.

———. Various years. *Population and Vital Statistics Report.* New York.

United Nations Economic and Social Commission for Western Asia. 1997. *Purchasing Power Parities: Volume and Price Level Comparisons for the Middle East, 1993.* E/ESCWA/STAT/1997/2. Amman.

UNRISD (United Nations Research Institute for Social Development). 1977. *Research Data Bank of Development Indicators.* Vol. 4, *Notes on the Indicators.* Geneva.

———. 1993. *Monitoring Social Progress in the 1990s: Data Constraints, Concerns, and Priorities.* Avebury, England.

U.S. Agency for International Development. 1999. *A Handbook on Fighting Corruption.* Washington, D.C.

U.S. Department of Health and Human Services. 1997. *Social Security Systems throughout the World.* Washington, D.C.

U.S. Environmental Protection Agency. 1995. *National Air Quality and Emissions Trends Report 1995.* Washington, D.C.

Wacziarg, Romain. 1998. "Measuring the Dynamic Gains from Trade." Policy Research Working Paper 2001. World Bank, Development Prospects Group, Washington, D.C.

Walsh, Michael P. 1994. "Motor Vehicle Pollution Control: An Increasingly Critical Issue for Developing Countries." World Bank, Washington, D.C.

Walton, Michael. 1997. "Will Global Advance Include the World's Poor?" Paper presented at the Aspen Institute conference on Poverty Persistence in Developing Countries: Determining the Causes and Closing the Gaps, 1–4 December, Broadway, England.

WCEFA Inter-Agency Commission (United Nations Development Programme, United Nations Educational, Scientific, and Cultural Organization, United Nations Children's Fund, and World Bank). 1990. *World Conference on Education for All: Meeting Basic Learning Needs—Final Report.* Jomtien, Thailand.

WCMC (World Conservation Monitoring Centre). 1992. *Global Biodiversity: Status of the Earth's Living Resources.* London: Chapman and Hall.

———. 1994. *Biodiversity Data Sourcebook.* Cambridge: World Conservation Press.

WHO (World Health Organization). 1977. *International Classification of Diseases.* 9th rev. Geneva.

———. 1991. *Maternal Mortality: A Global Factbook.* Geneva.

———. 1996. *Evaluating the Implementation of the Strategy for Health for All by the Year 2000.* Geneva.

———. 1997a. *Coverage of Maternity Care.* Geneva.

———. 1997b. *Global Tuberculosis Control Report 1997.* Geneva.

———. 1997c. *Monitoring Reproductive Health: Selecting a Short List of National and Global Indicators.* Geneva.

———. 1997d. *Tobacco or Health: A Global Status Report, 1997.* Geneva.

———. 1998. *EPI Information System: Global Summary, September 1998.* Geneva.

———. Various years. *World Health Statistics Annual.* Geneva.

WHO (World Health Organization) and UNICEF (United Nations Children's Fund). 1992. *Low Birth Weight: A Tabulation of Available Information.* Geneva.

———. 1996. *Revised 1990 Estimates on Maternal Mortality: A New Approach.* Geneva.

Windham, Douglas M. 1988. *Indicators of Educational Effectiveness and Efficiency.* Tallahassee, Fla.: Florida State University, Educational Efficiency Clearinghouse.

Wolf, Holger C. 1997. "Patterns of Intra- and Inter-State Trade." NBER Working Paper 5939. National Bureau of Economic Research, Cambridge, Mass.

Wolfensohn, James D. 1997. "The Challenge of Inclusion." Address to the Board of Governors of the World Bank Group and the International Monetary Fund, 23 September, Hong Kong, China.

———. 1998. "The Other Crisis." Address to the Board of Governors of the World Bank Group and the International Monetary Fund, 6 October, Washington, D.C.

World Bank. 1990. *World Development Report 1990: Poverty.* New York: Oxford University Press.

———. 1991a. *Developing the Private Sector: The World Bank's Experience and Approach.* Washington, D.C.

———. 1991b. *World Development Report 1991: The Challenge of Development.* New York: Oxford University Press.

———. 1992. *World Development Report 1992: Development and the Environment.* New York: Oxford University Press.

———. 1993a. *The Environmental Data Book: A Guide to Statistics on the Environment and Development.* Washington, D.C.

———. 1993b. *Purchasing Power of Currencies: Comparing National Incomes Using ICP Data.* Washington, D.C.

———. 1993c. *World Development Report 1993: Investing in Health.* New York: Oxford University Press.

———. 1994a. *Global Economic Prospects and the Developing Countries 1994.* Washington, D.C.

———. 1994b. *Governance: The World Bank's Experience.* Development in Practice series. Washington, D.C.

———. 1994c. *World Development Report 1994: Infrastructure for Development.* New York: Oxford University Press.

———. 1995a. *Advancing Social Development: A World Bank Contribution to the Social Summit.* Washington, D.C.

———. 1995b. *Bureaucrats in Business: The Economics and Politics of Government Ownership.* A World Bank Policy Research Report. New York: Oxford University Press.

———. 1995c. *Global Economic Prospects and the Developing Countries 1995.* Washington, D.C.

———. 1995d. *Priorities and Strategies for Education: A Review.* Washington, D.C.

———. 1995e. *Private Sector Development in Low-Income Countries.* Washington, D.C.

———. 1995f. *Toward Gender Equality: The Role of Public Policy—An Overview.* Washington, D.C.

———. 1995g. *World Development Report 1995: Workers in an Integrating World.* New York: Oxford University Press.

———. 1996a. *From Vision to Action in the Rural Sector.* Agriculture Department. Washington, D.C.

———. 1996b. *Global Economic Prospects and the Developing Countries 1996.* Washington, D.C.

———. 1996c. *Livable Cities for the 21st Century.* Washington, D.C.

———. 1996d. *National Environmental Strategies: Learning from Experience.* Environment Department. Washington, D.C.

———. 1997a. *Can Environment Wait? Priorities for East Asia.* Washington, D.C.

———. 1997b. *Confronting AIDS: Public Priorities in a Global Epidemic.* A World Bank Policy

Research Report. New York: Oxford University Press.

———. 1997c. *Expanding the Measure of Wealth: Indicators of Sustainable Development.* ESD Studies and Monographs Series, no. 17. Washington, D.C.

———. 1997d. *Global Economic Prospects and the Developing Countries 1997.* Washington, D.C.

———. 1997e. *Helping Countries Combat Corruption: The Role of the World Bank.* Poverty Reduction and Economic Management Network. Washington, D.C.

———. 1997f. *Private Capital Flows to Developing Countries: The Road to Financial Integration.* A World Bank Policy Research Report. New York: Oxford University Press.

———. 1997g. *Sector Strategy: Health, Nutrition, and Population.* Human Development Network. Washington, D.C.

———. 1997h. *World Development Indicators 1997.* Washington, D.C.

———. 1997i. *World Development Report 1997: The State in a Changing World.* New York: Oxford University Press.

———. 1998a. *Assessing Aid: What Works, What Doesn't, and Why.* A World Bank Policy Research Report. New York: Oxford University Press.

———. 1998b. *East Asia: The Road to Recovery.* Washington, D.C.

———. 1998c. *Education Sector Strategy Paper.* Washington, D.C.

———. 1998d. *1998 Catalog: Operational Documents as of July 31, 1998.* Washington, D.C.

———. 1998e. *World Development Report 1998/99: Knowledge for Development.* New York: Oxford University Press.

———. 1999a. *Global Economic Prospects and the Developing Countries 1998/99: Beyond Financial Crisis.* Washington, D.C.

———. 1999b. *Health, Nutrition, and Population Indicators: A Statistical Handbook.* Human Development Network. Washington, D.C.

———. Forthcoming. *Poverty Reduction and the World Bank: Progress in Fiscal 1998.* Washington, D.C.

———. Various issues. *Global Commodity Markets.* Quarterly. Washington, D.C.

———. Various years. *Global Development Finance.* (Formerly published under the title *World Debt Tables.*) Washington, D.C.

World Intellectual Property Organization. 1998. *Industrial Property Statistics.* Publication A. Geneva.

World Resources Institute, International Institute for Environment and Development, and IUCN (World Conservation Union). Various years. *World Directory of Country Environmental Studies.* Washington, D.C.

World Resources Institute, UNEP (United Nations Environment Programme), and UNDP (United Nations Development Programme). 1994. *World Resources 1994–95: A Guide to the Global Environment.* New York: Oxford University Press.

World Resources Institute, UNEP (United Nations Environment Programme), UNDP (United Nations Development Programme), and World Bank. 1998. *World Resources 1998–99: A Guide to the Global Environment.* New York: Oxford University Press.

World Tourism Organization. 1997. *Yearbook of Tourism Statistics.* Vols. 1 and 2. 49th ed. Madrid.

———. 1998. *Compendium of Tourism Statistics 1992–96.* 18th ed. Madrid.

Zimmermann, Klaus F. 1995. "European Migration: Push and Pull." In Michael Bruno and Boris Pleskovic, eds., *Proceedings of the World Bank Annual Conference on Development Economics 1994.* Washington, D.C.: World Bank.

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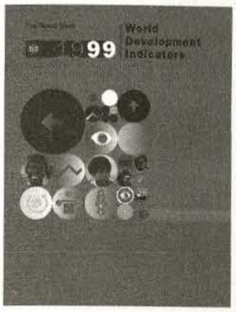

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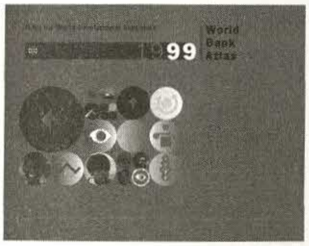

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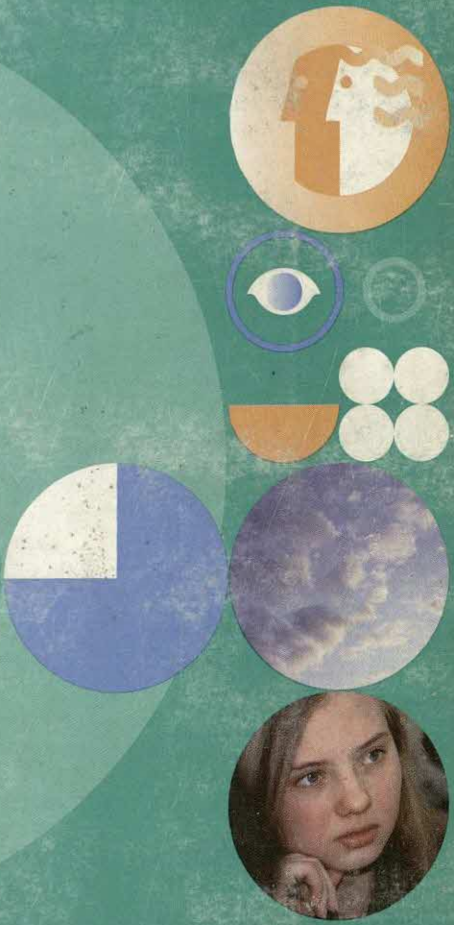

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